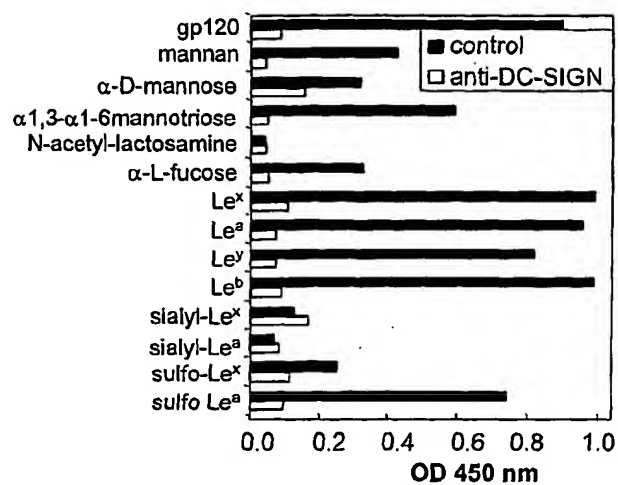


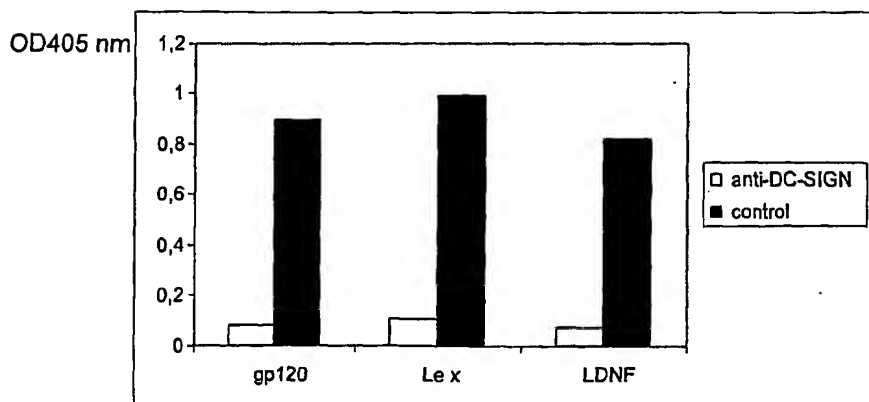
Fig. 1

A Is table of structures

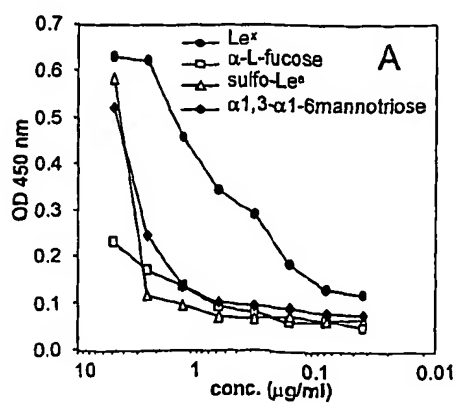
B



C



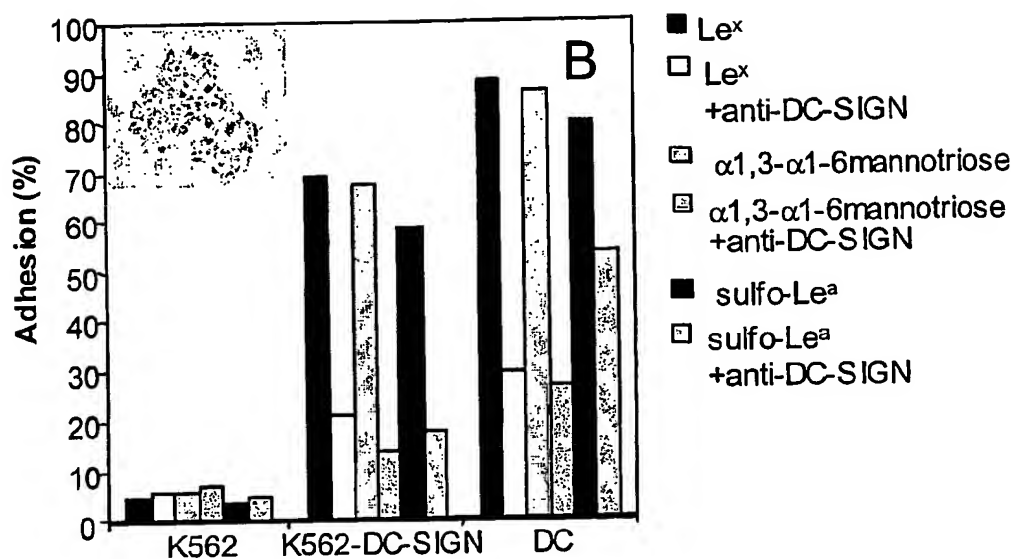
D



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Fig. 2



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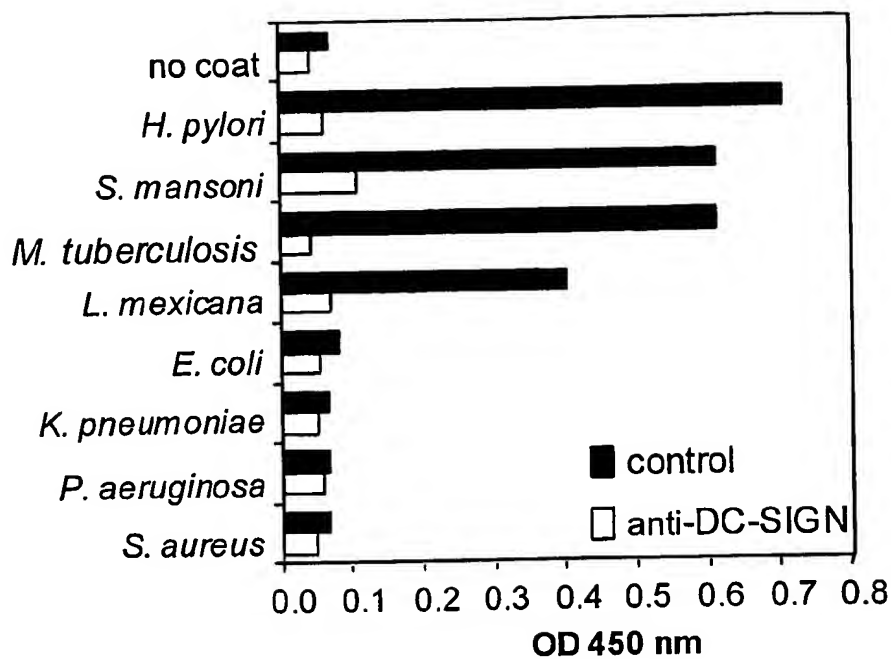


Fig. 3A

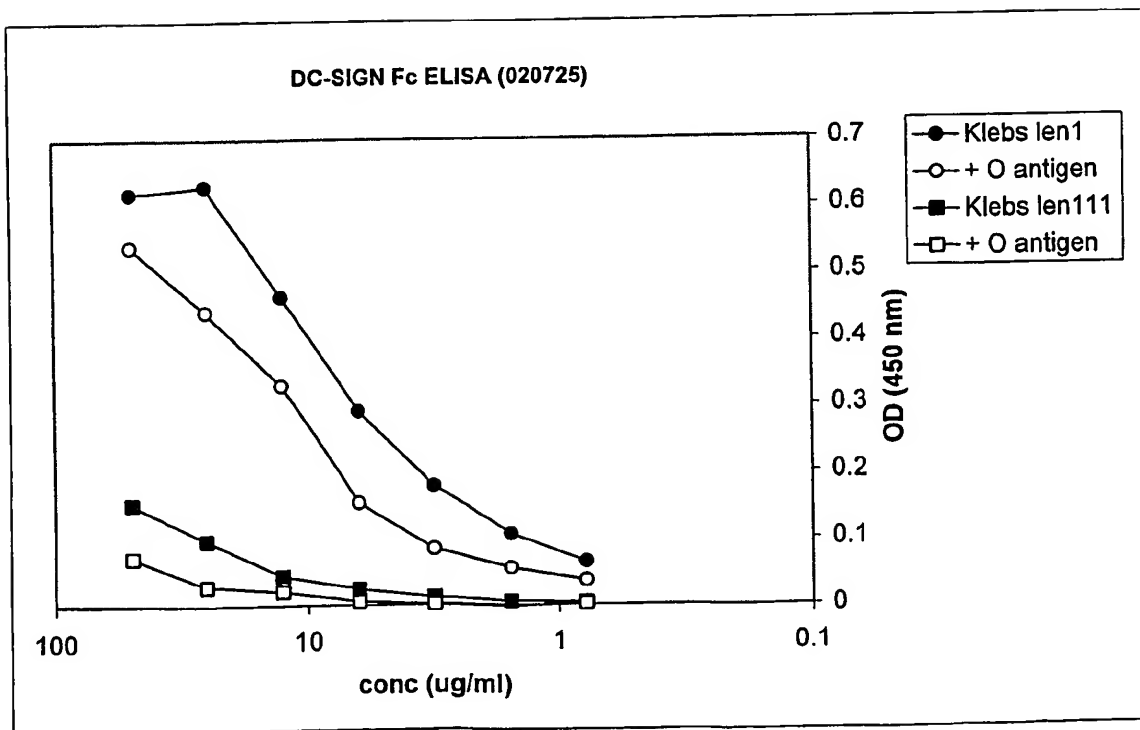
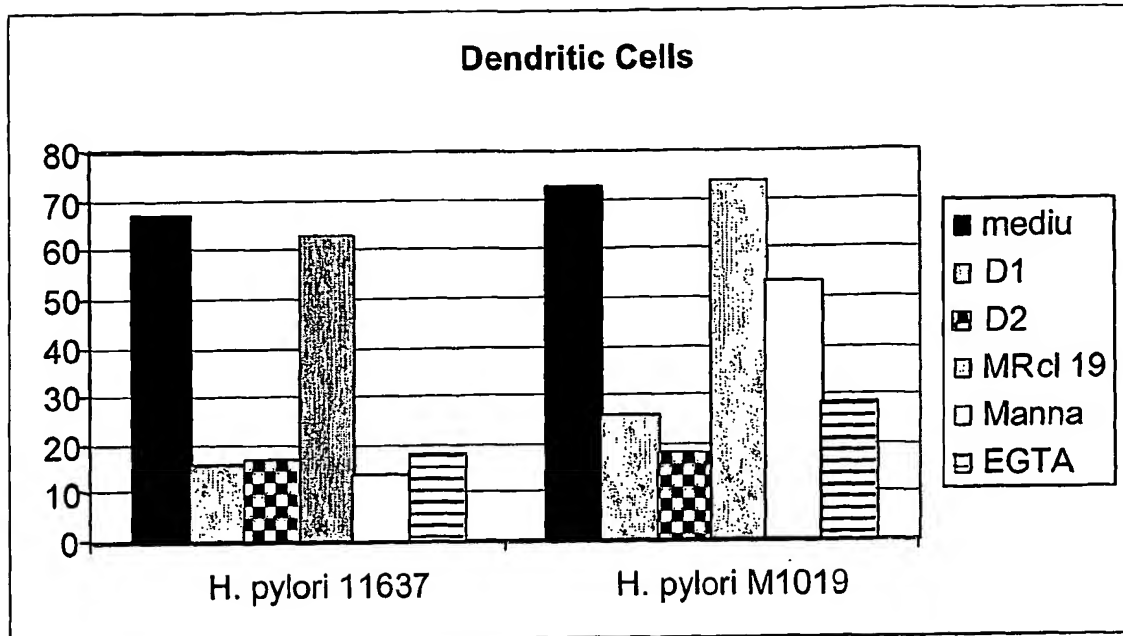


Fig. 3B

Fig. 4



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Fig. 5

Green: CD107a
Red: Le^x-PAA-bio

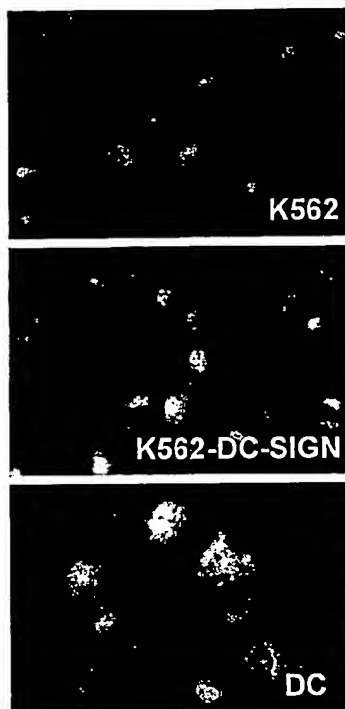


Fig. 6

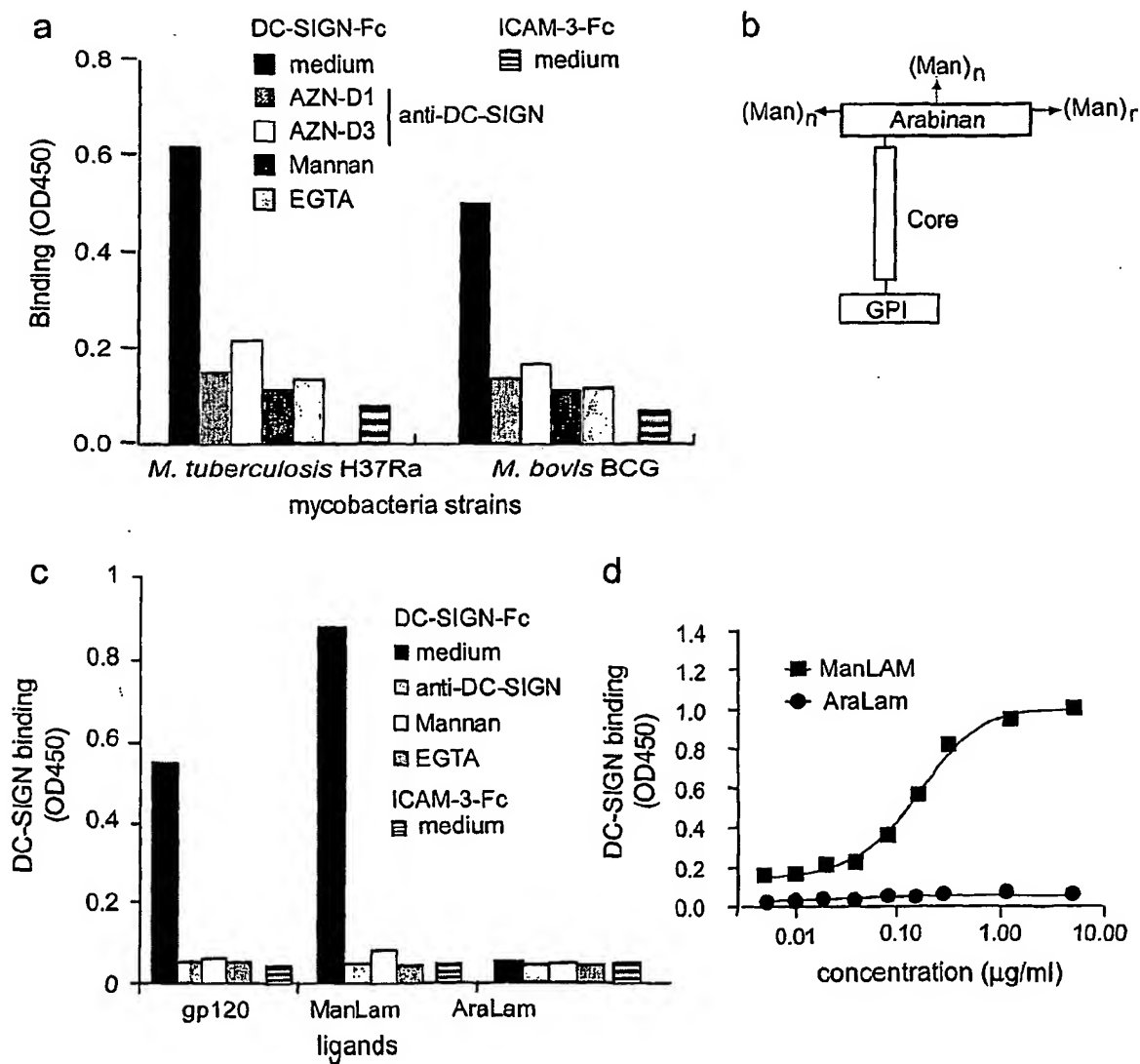


Fig. 7

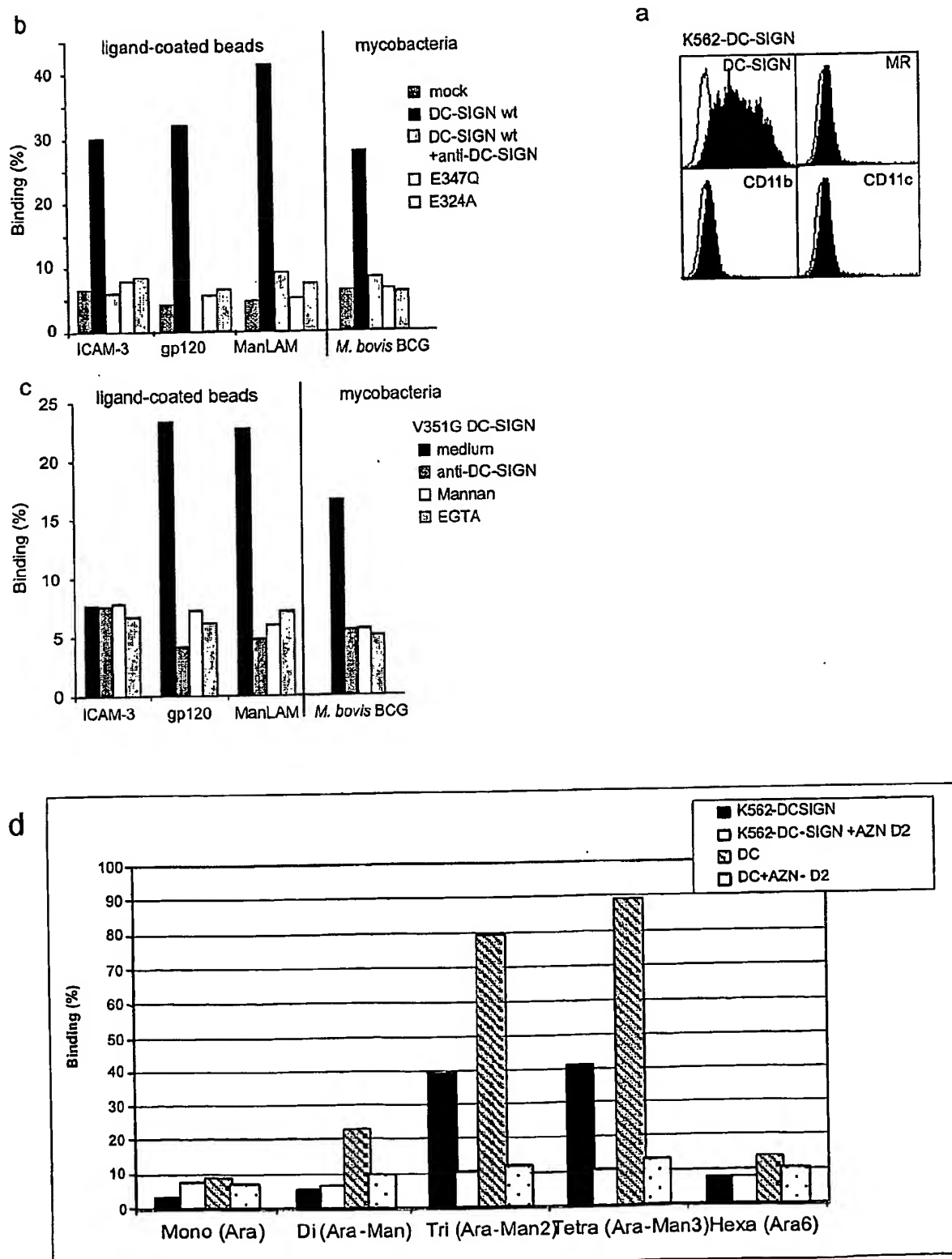
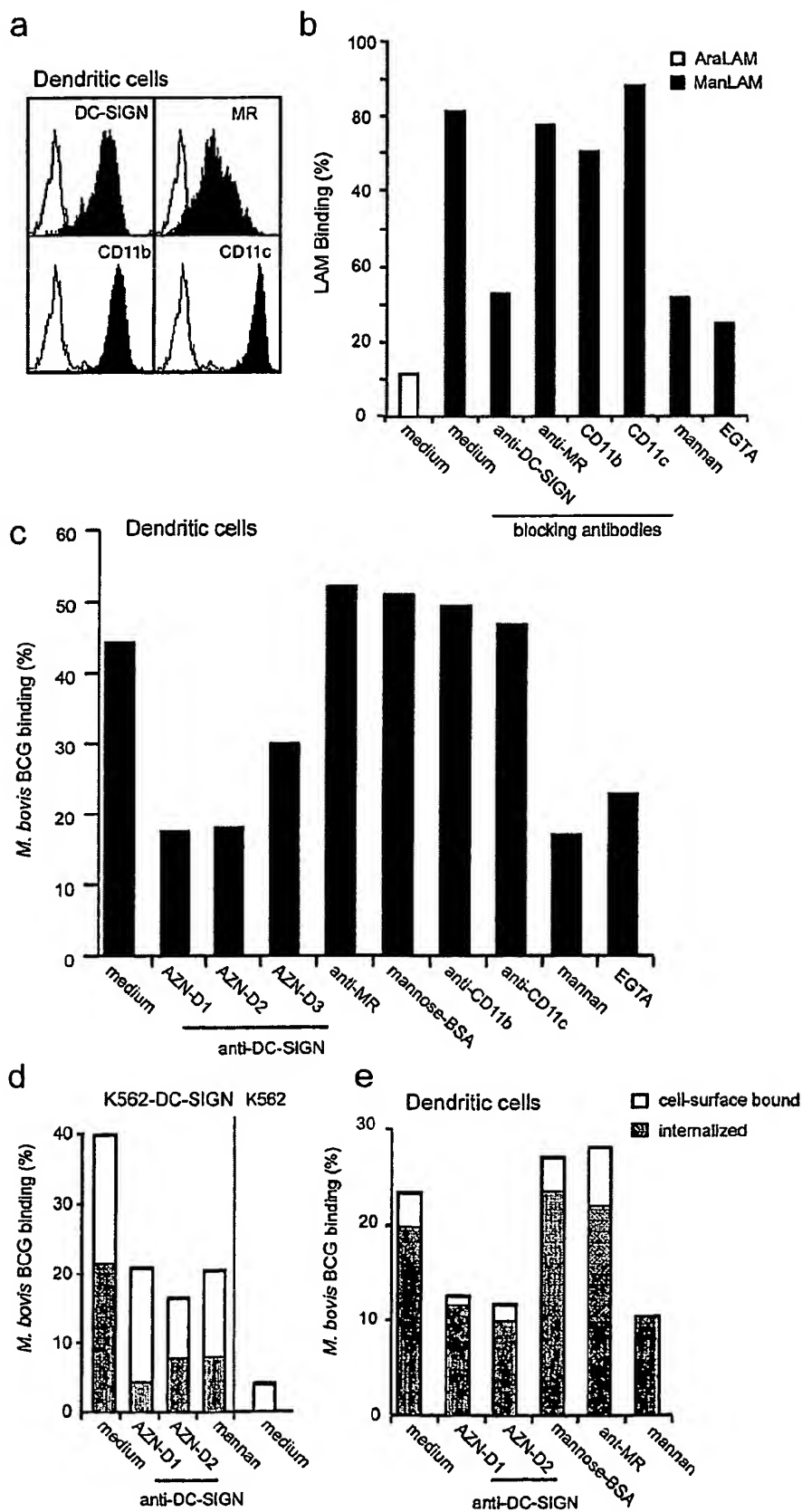


Fig. 8



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Fig. 9

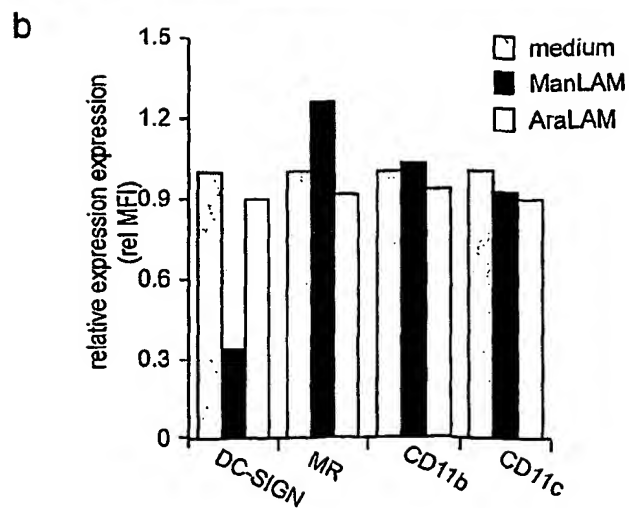
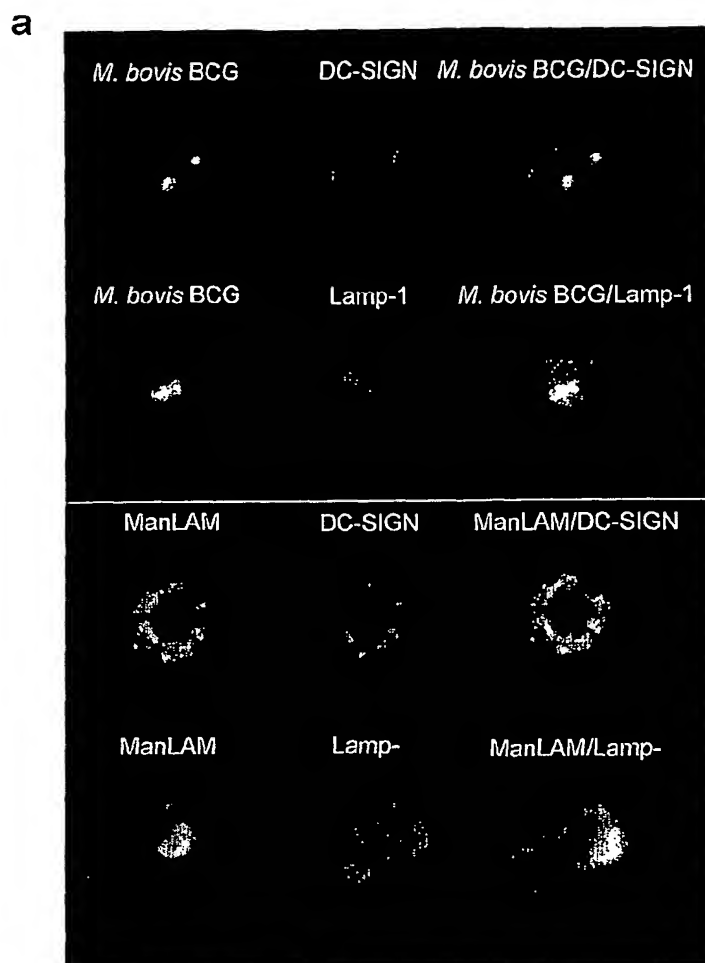


Fig. 10

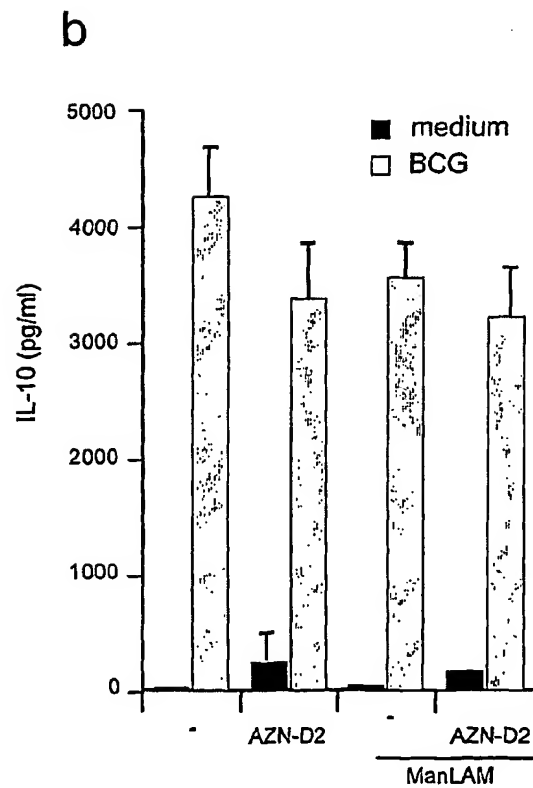
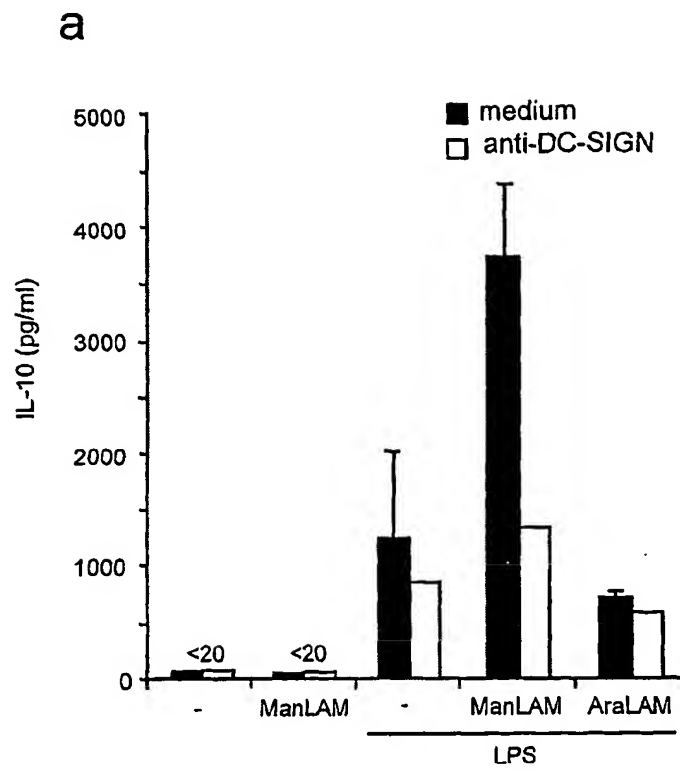


Fig. 11

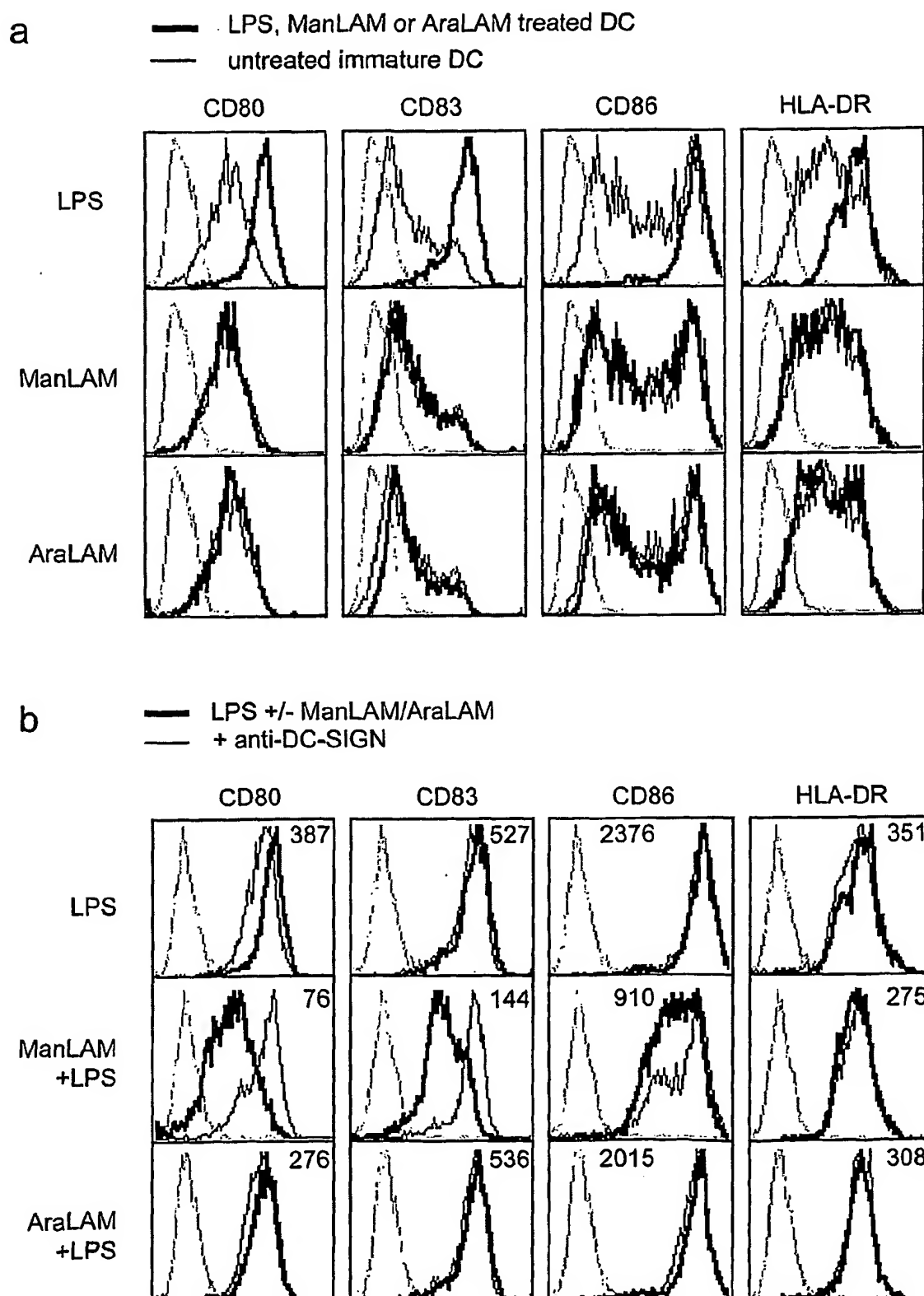
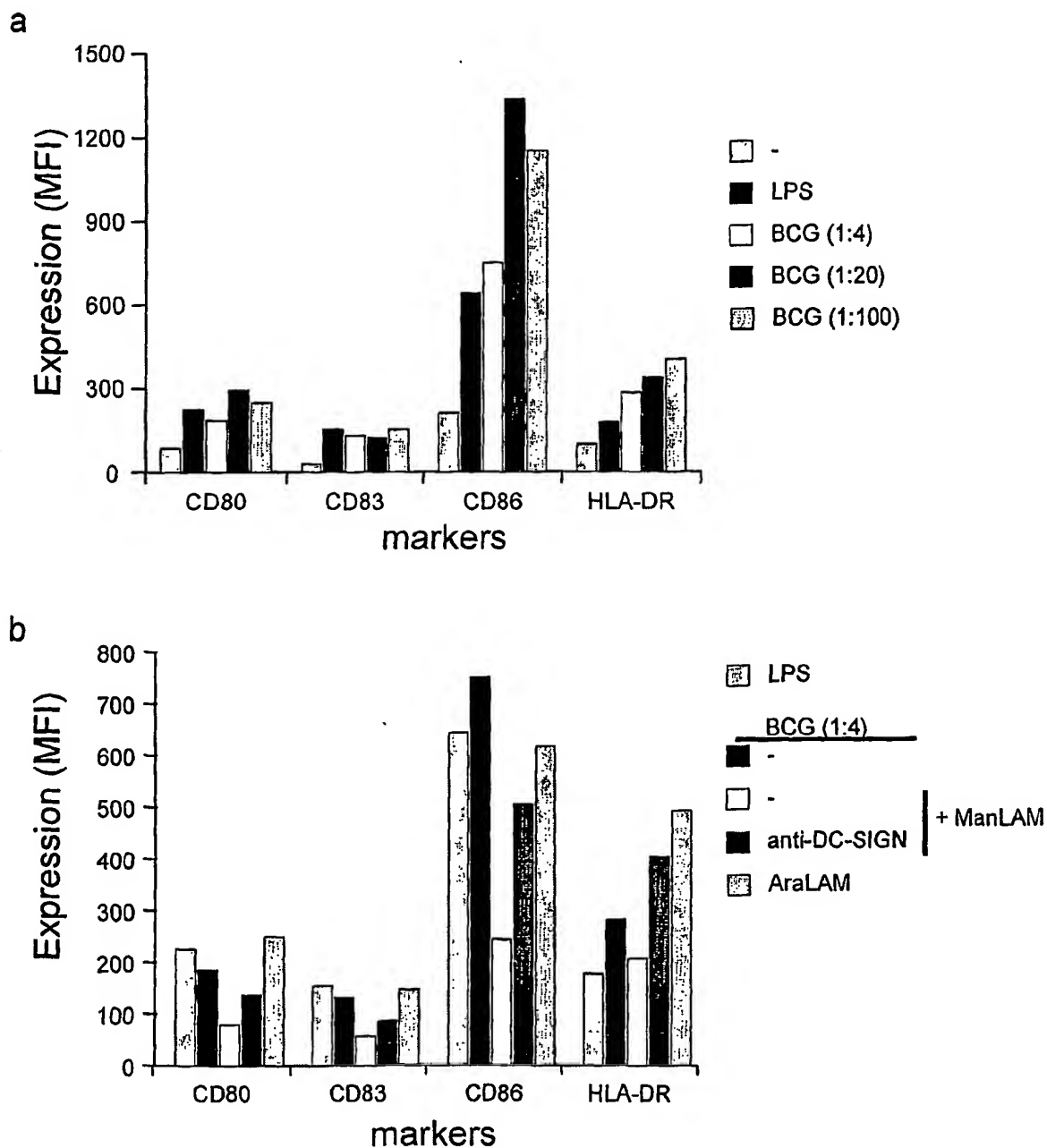


Fig. 12



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Fig. 13

Carbohydrate antigens on *S. mansoni* SEA

Carbohydrate epitope	Shortname	anti-glycan MAb
	Lewis-X	CB10 (32)
	LDN	SMLDN1.1 (31)
	LDNF	SMLDNF1 (4)
	LDN-DF	114-5B1-A (12)

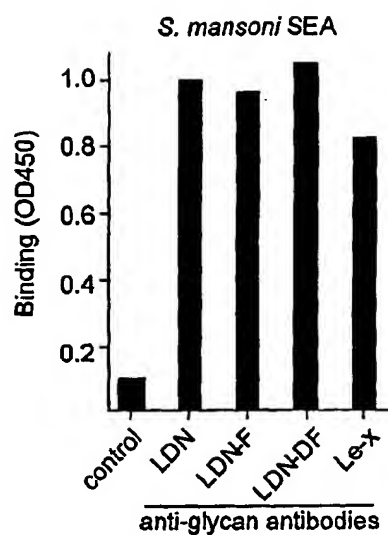


Fig. 14

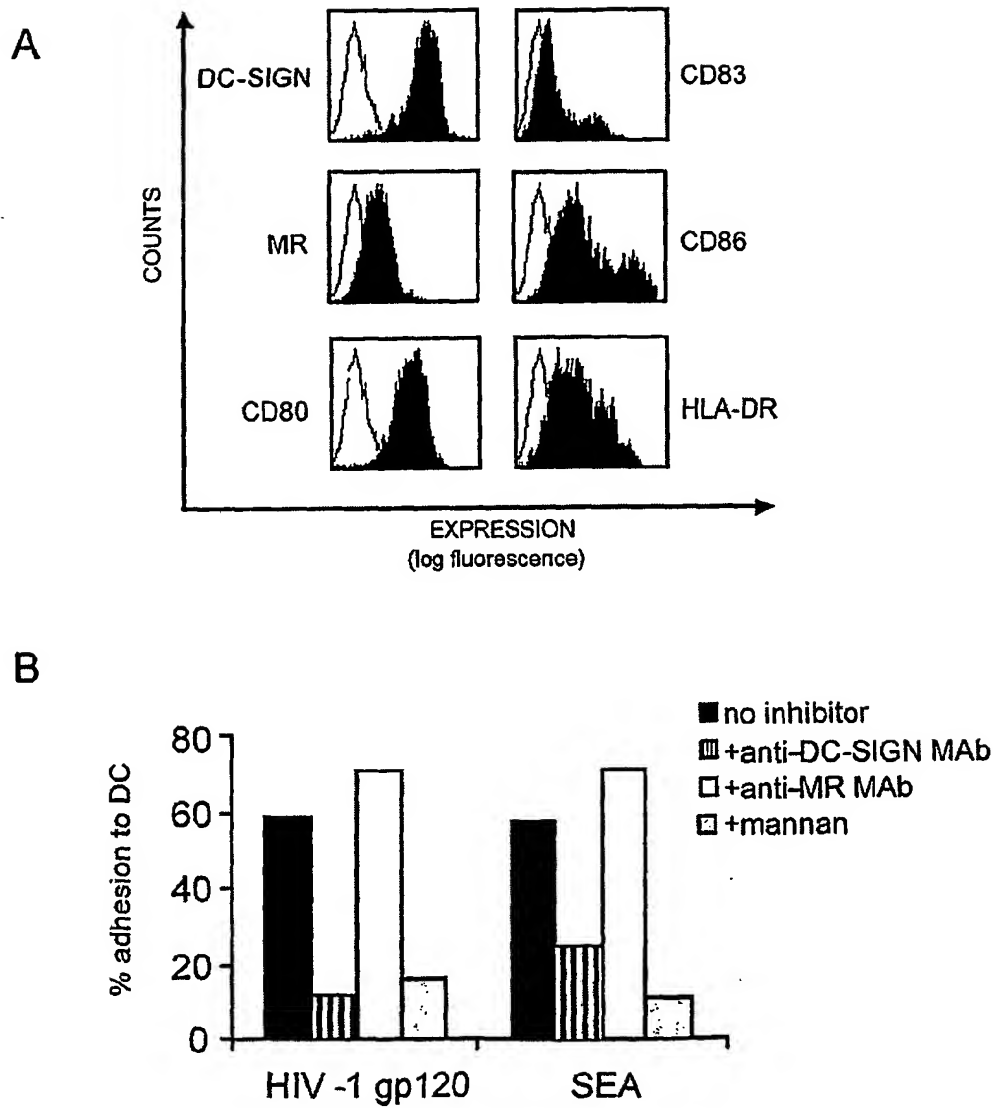
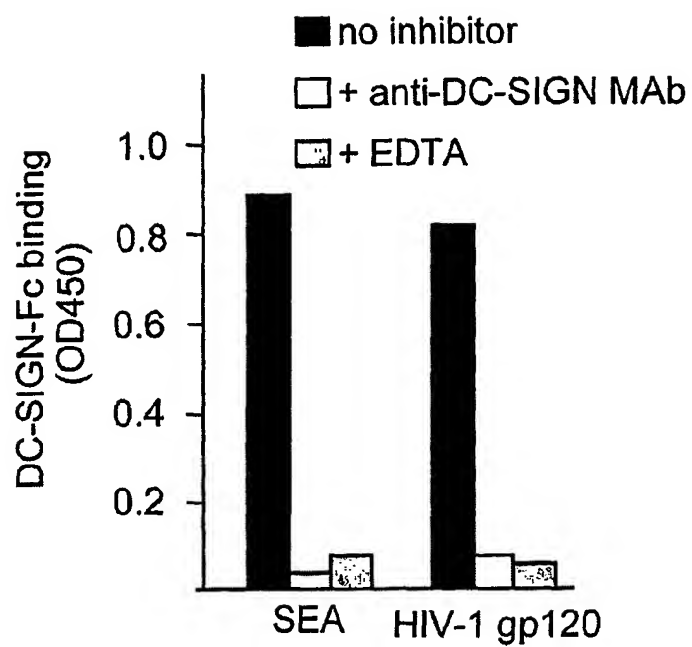


Fig. 15



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Fig. 16

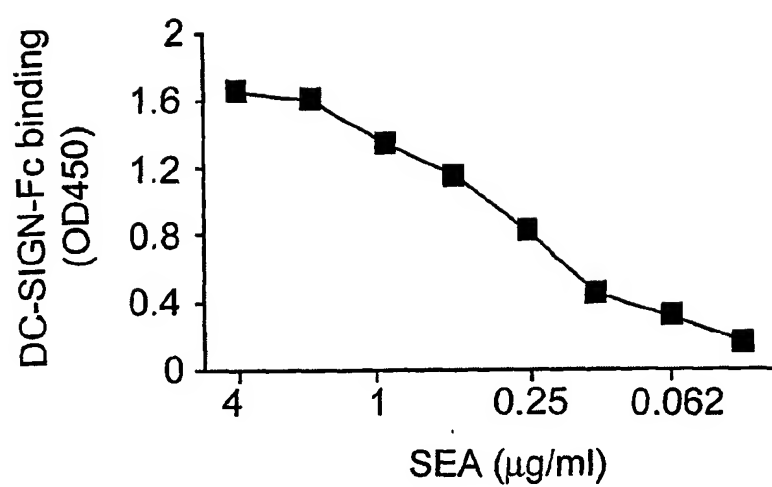


Fig. 17

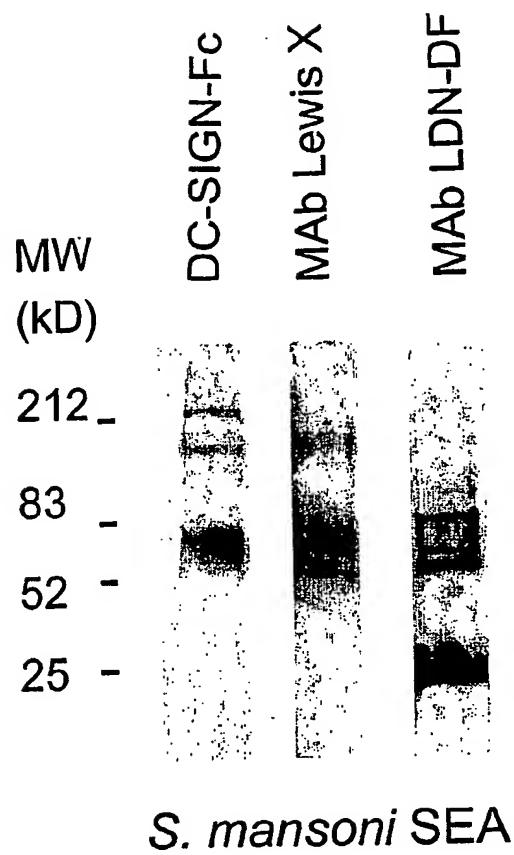


Fig. 18

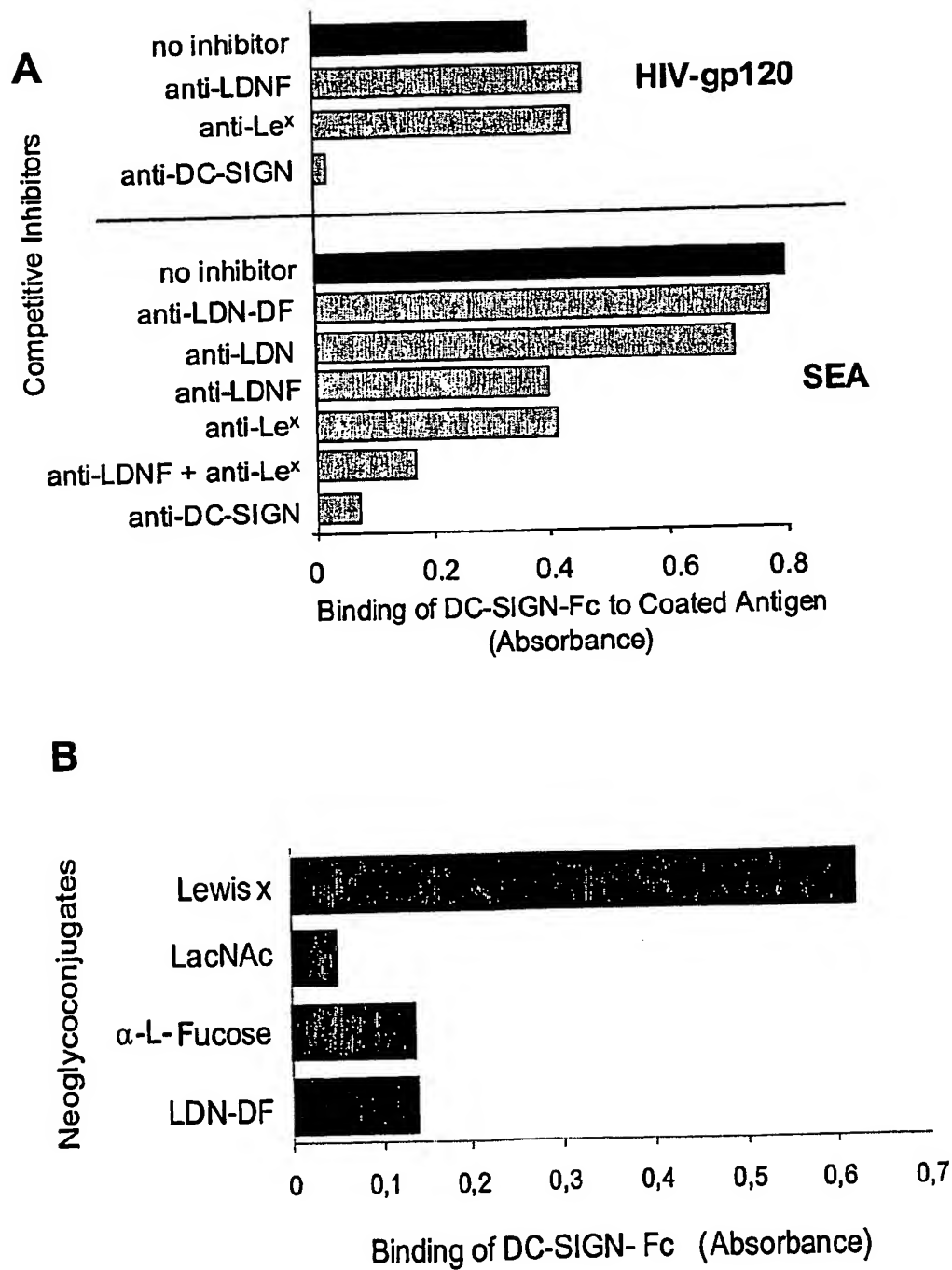


Fig. 19

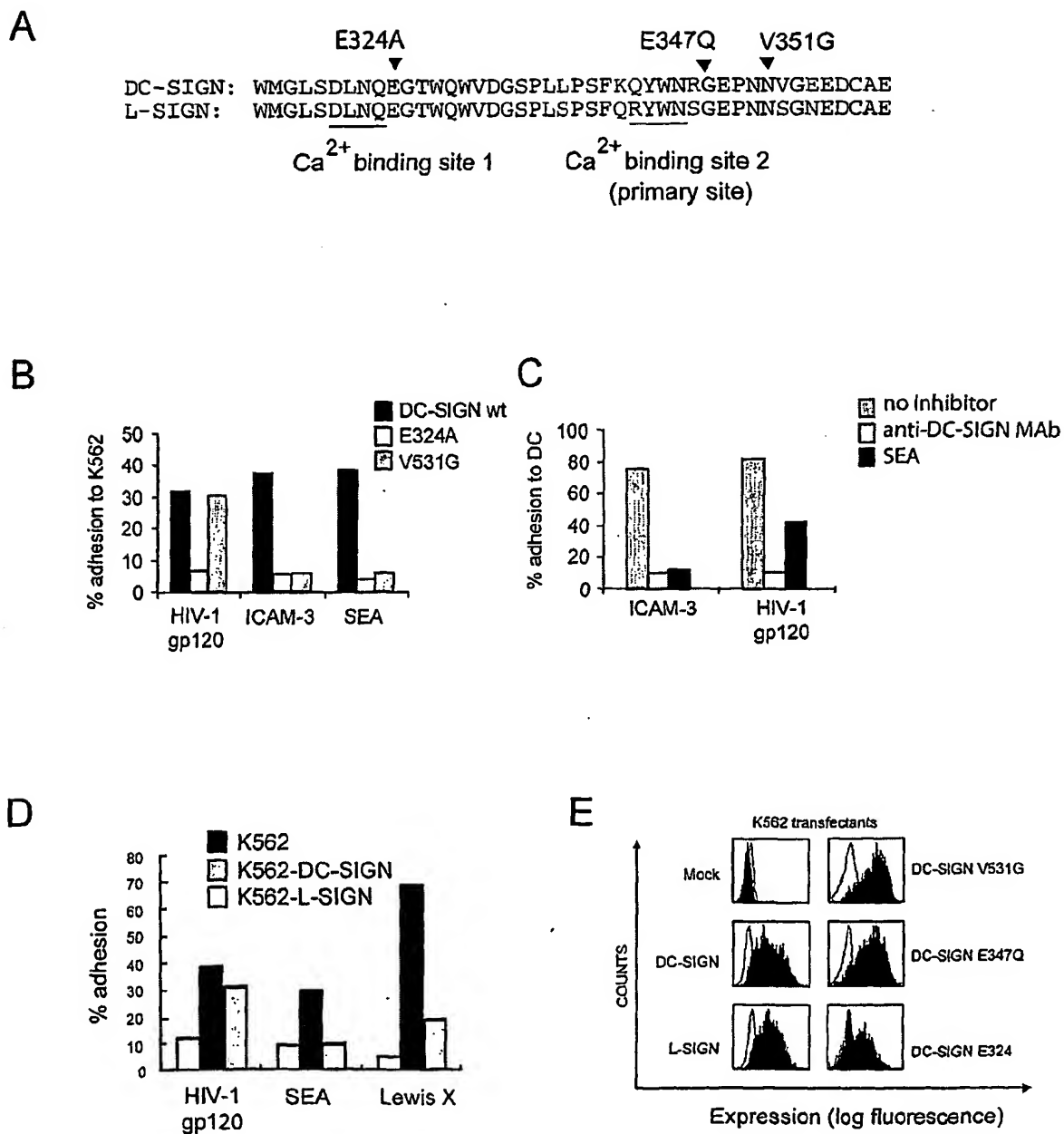


Fig. 20A

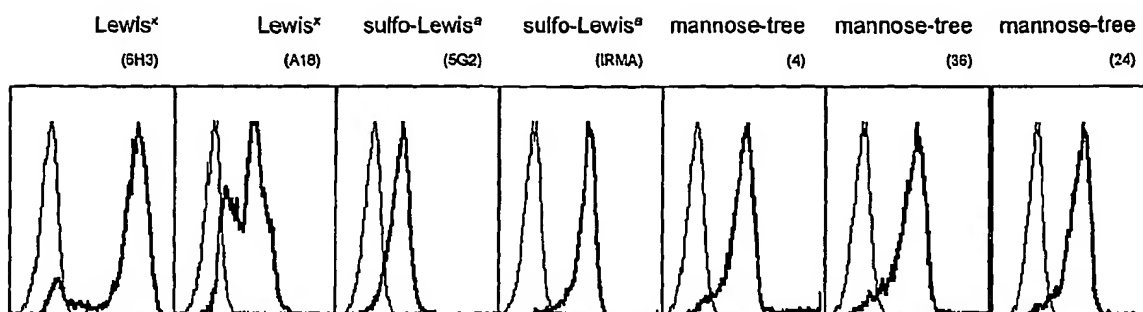


Fig. 20B

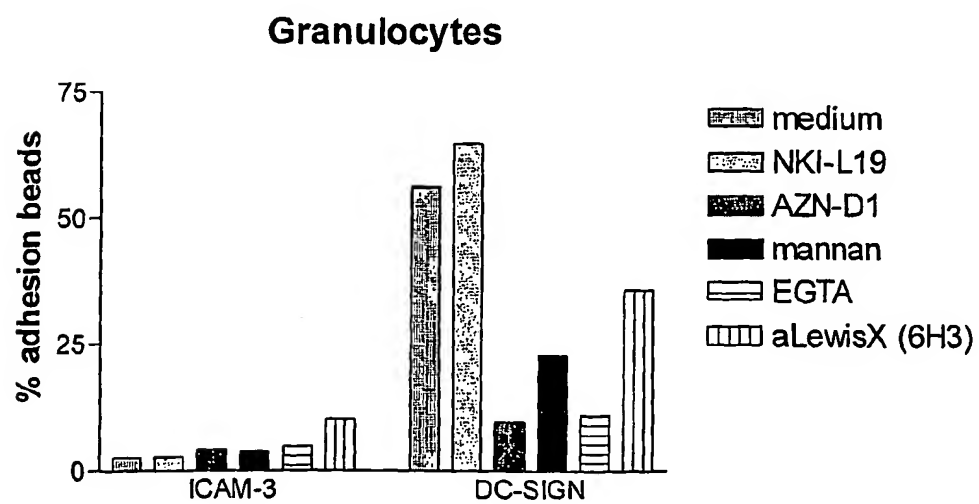


Fig. 21

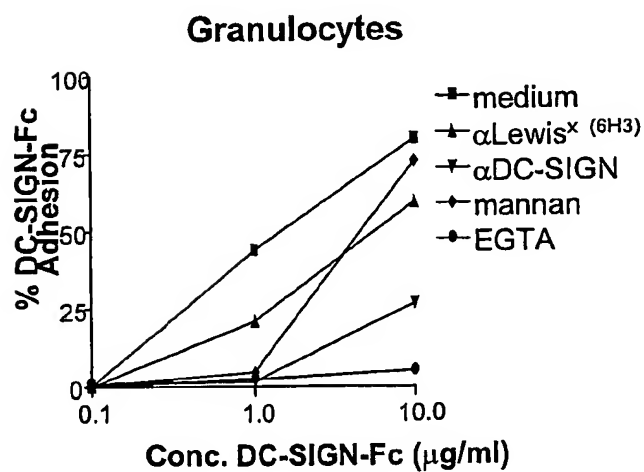
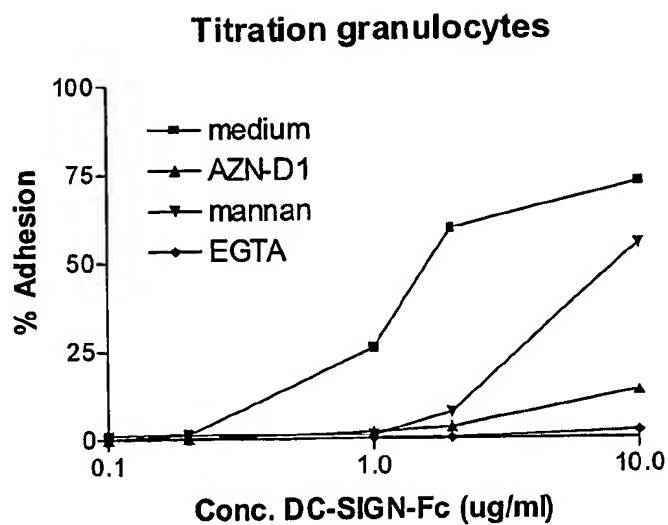


Fig. 22A

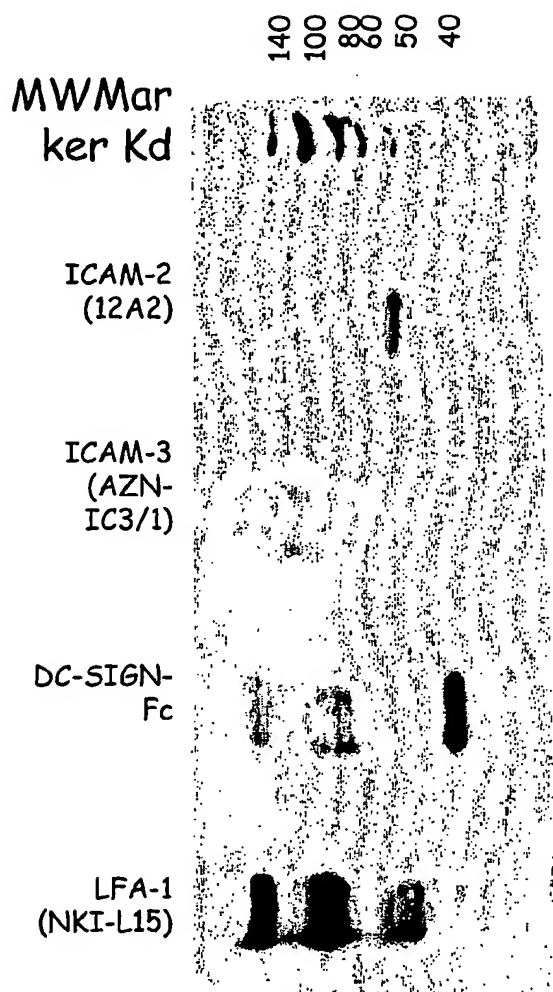


Fig. 22B

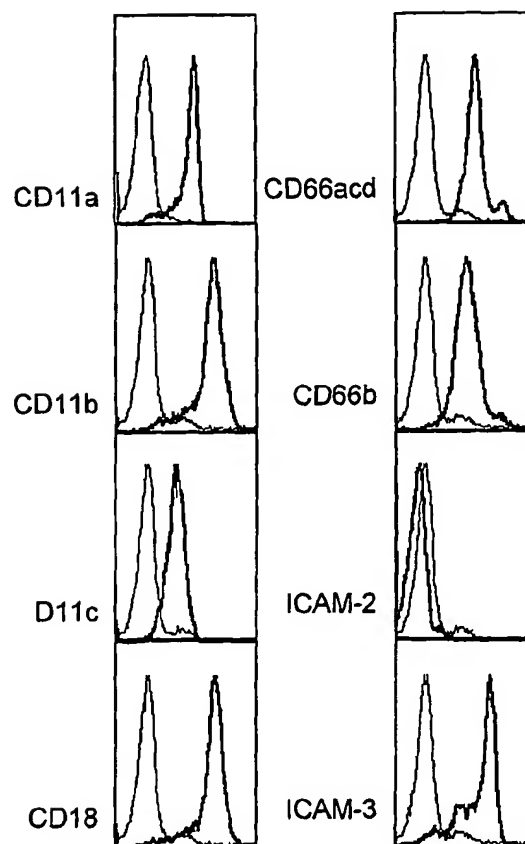


Fig. 22C

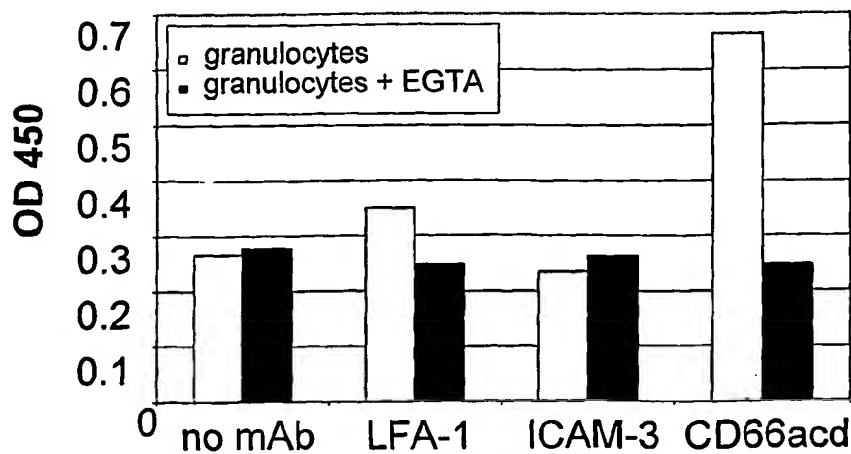
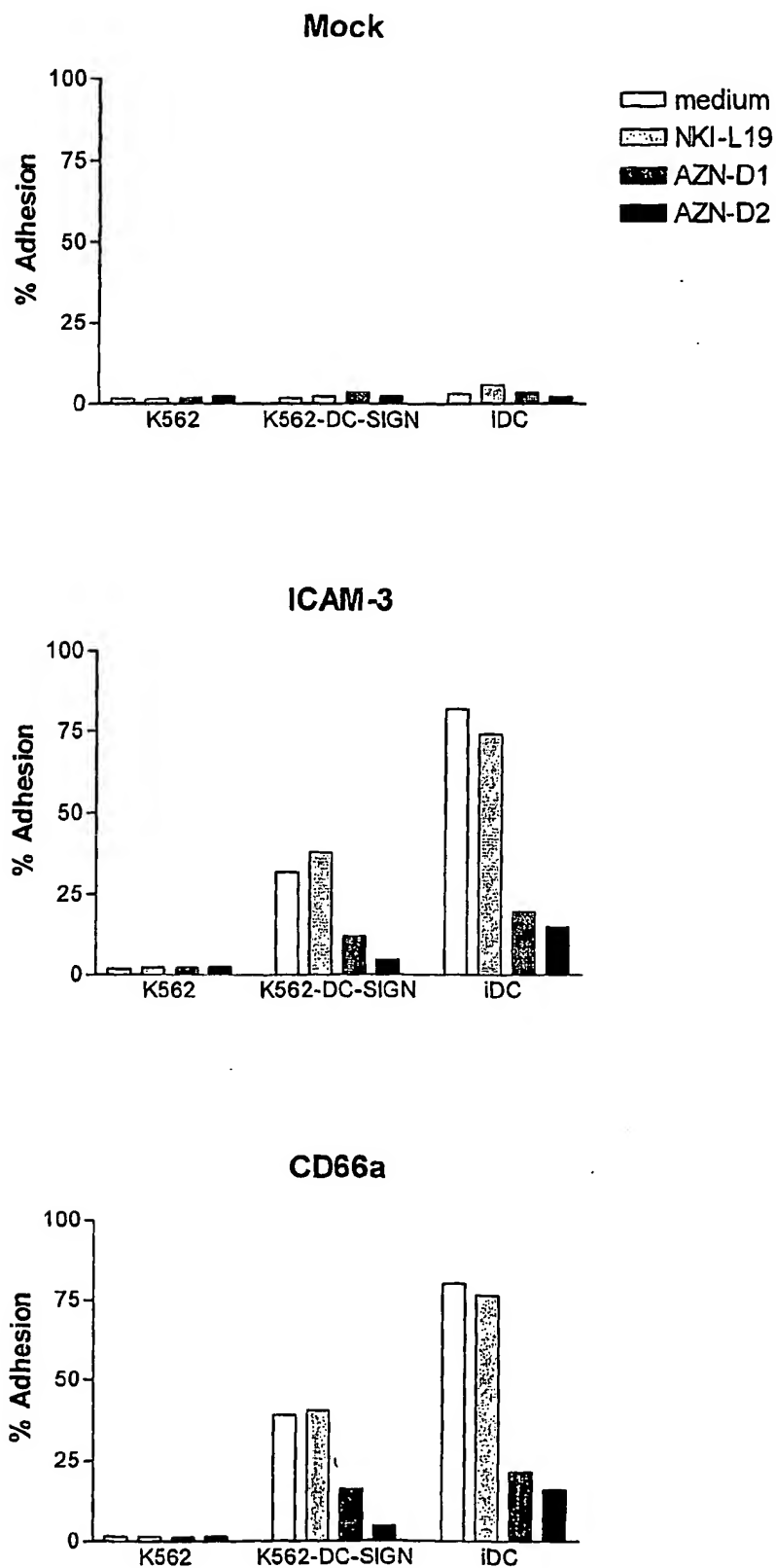


Fig. 23



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Fig. 24

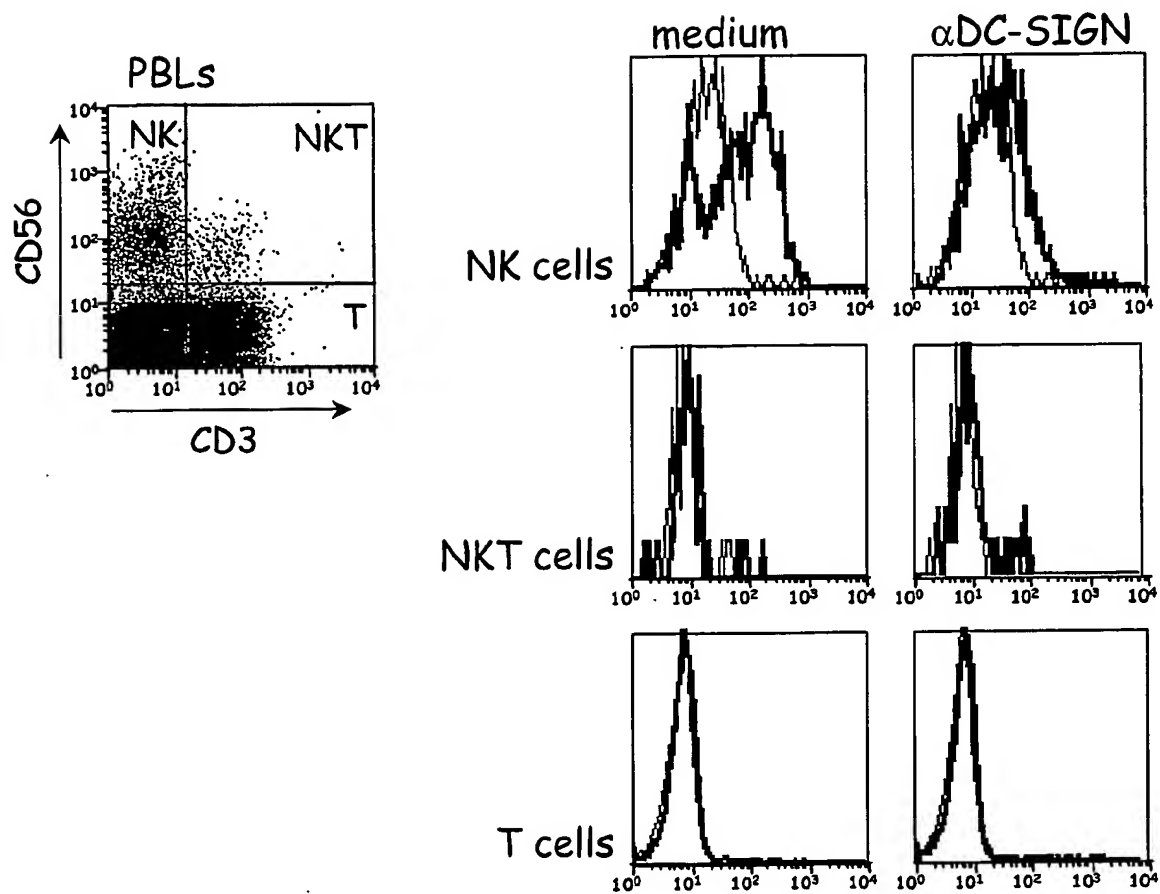
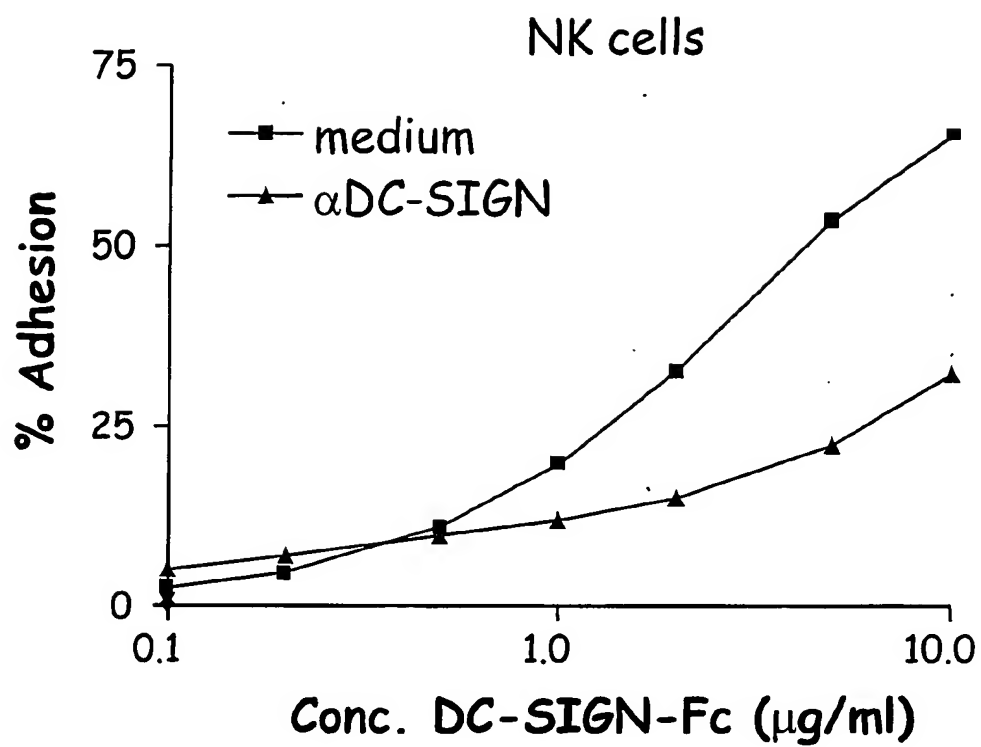


Fig. 25



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Fig. 26

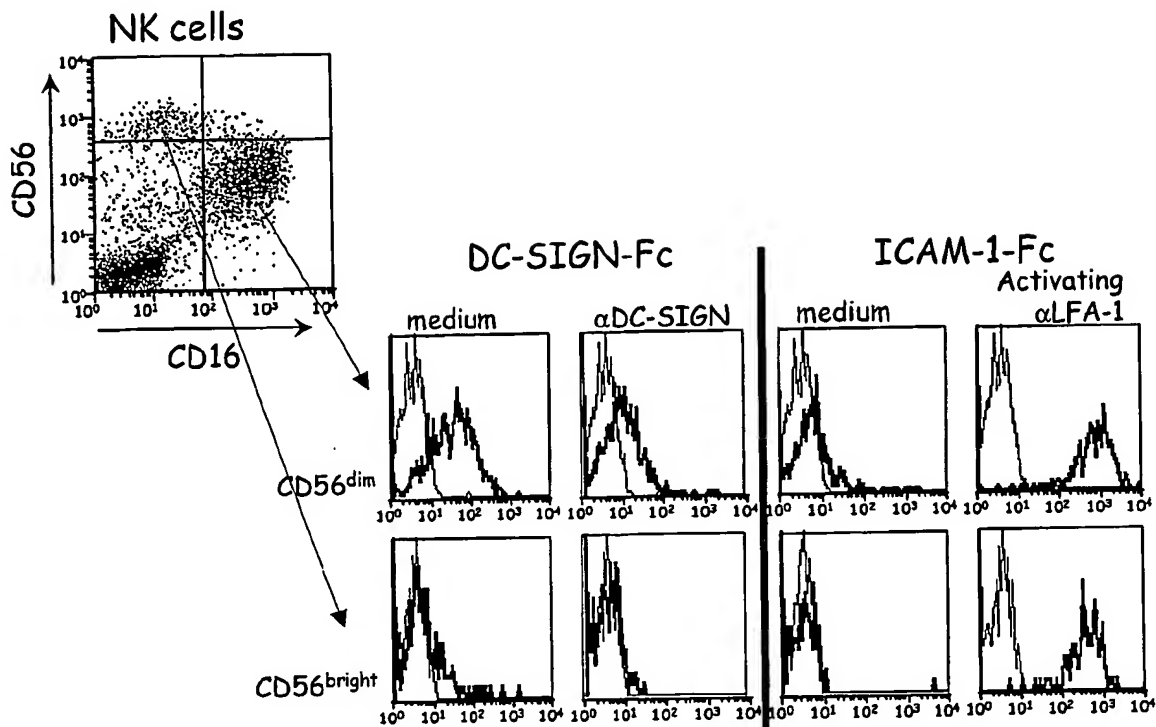


Fig. 27

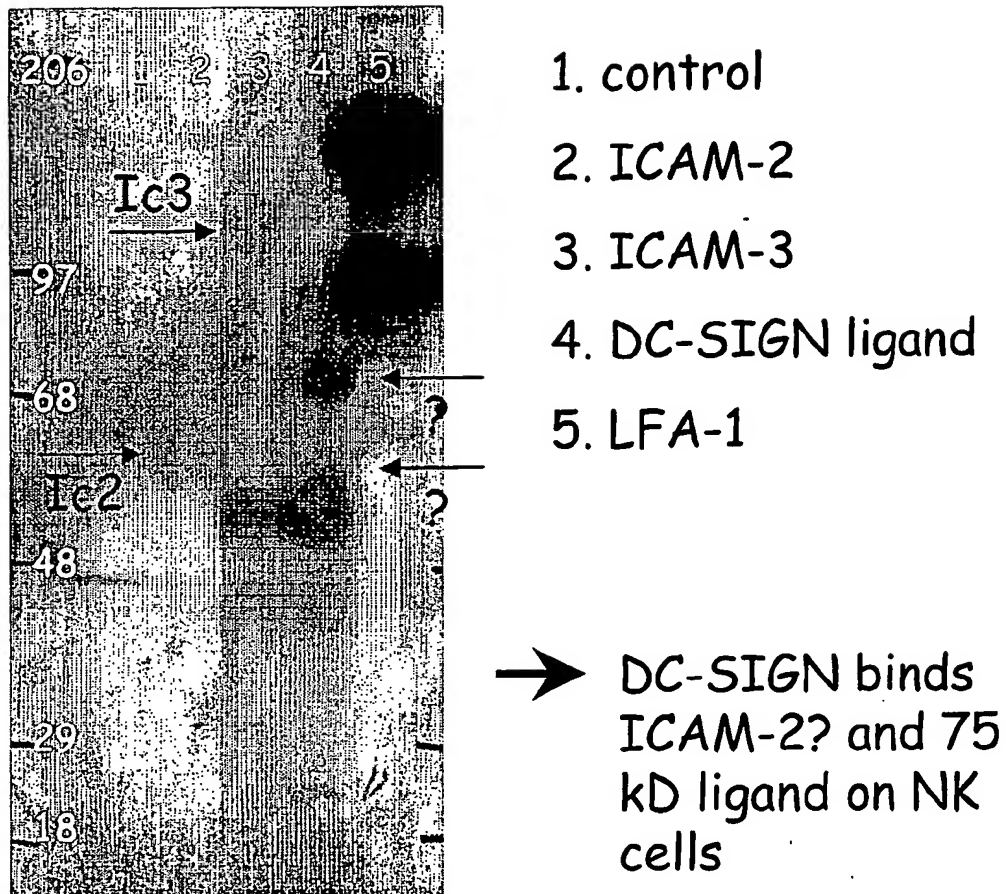


Fig. 28

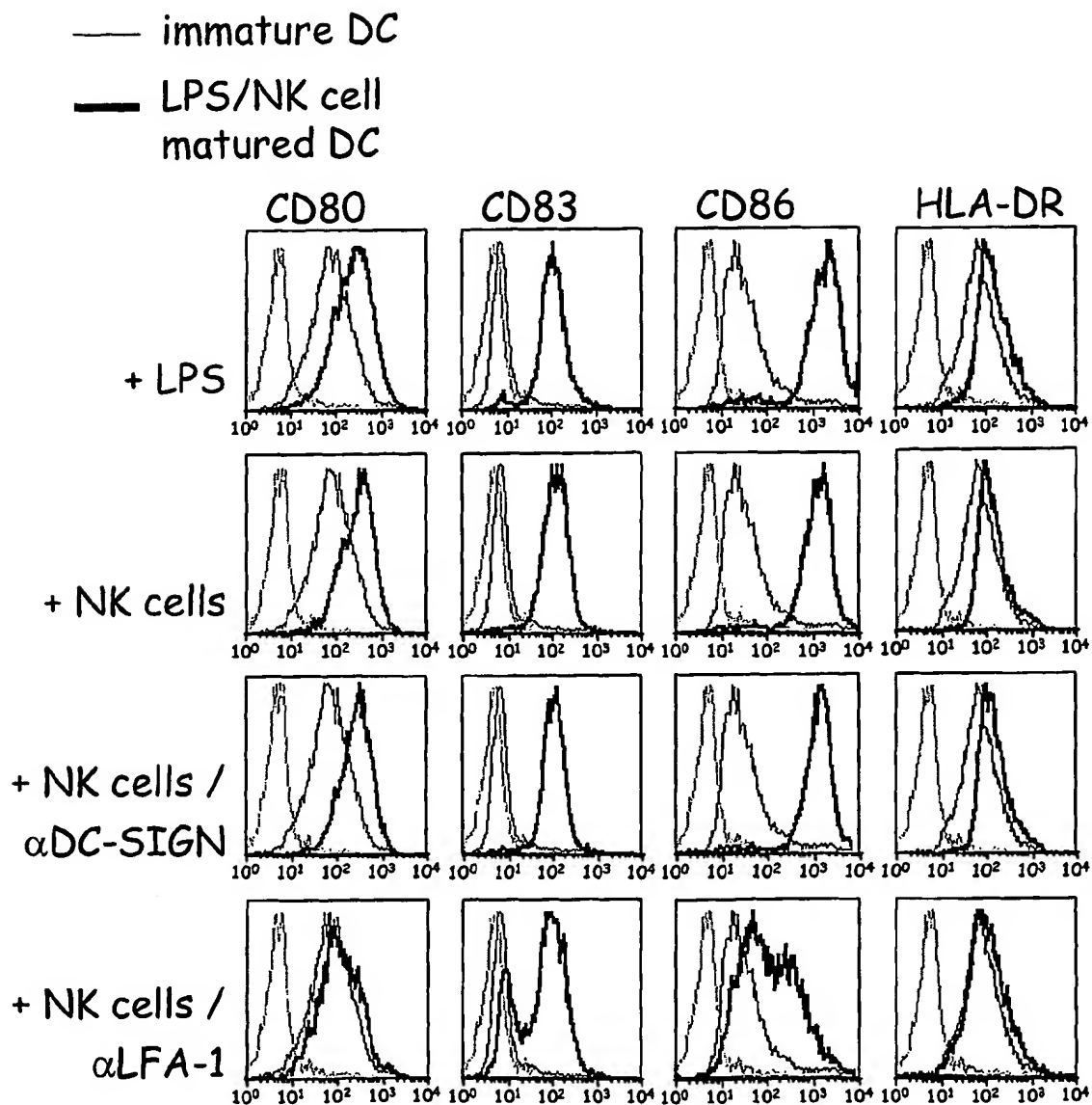
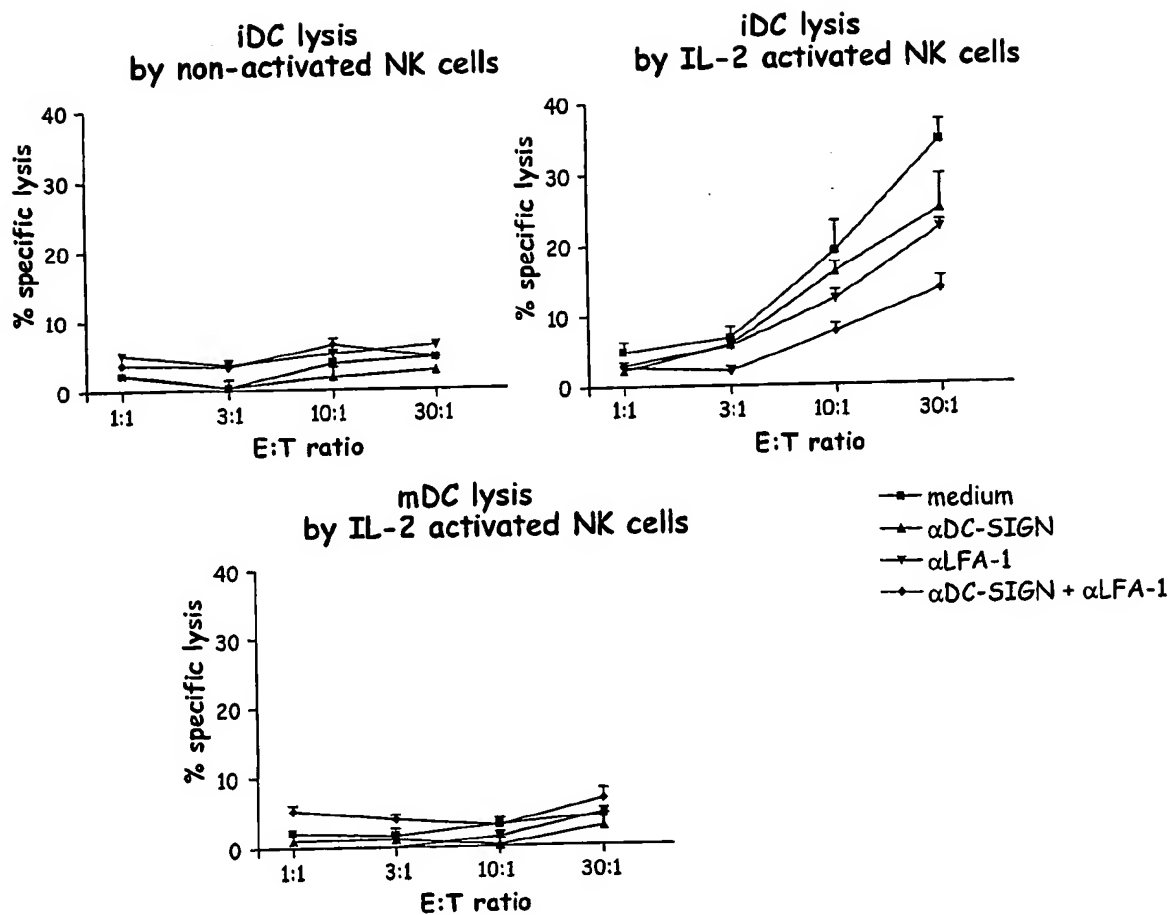


Fig. 29



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Fig. 30

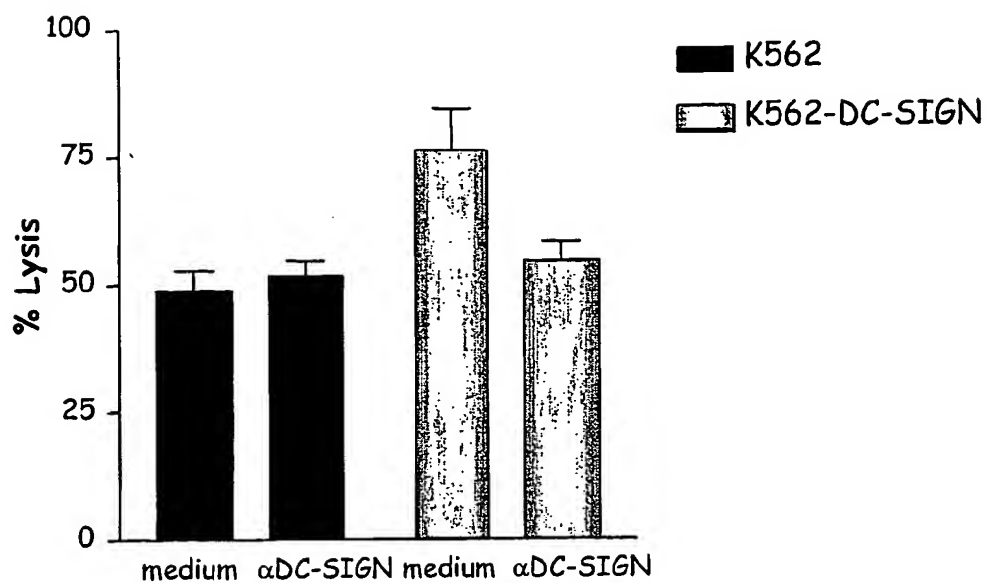
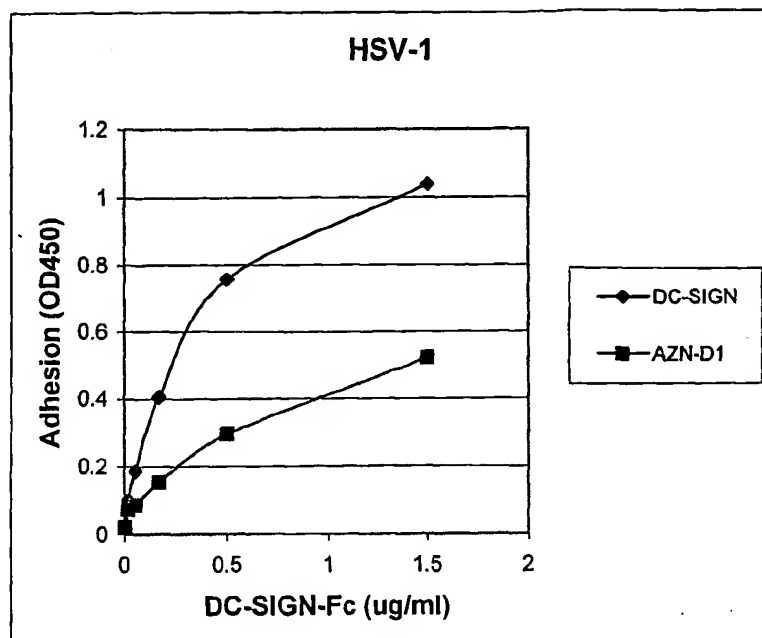


Fig. 31

HSV-1 binding



HSV-2 binding

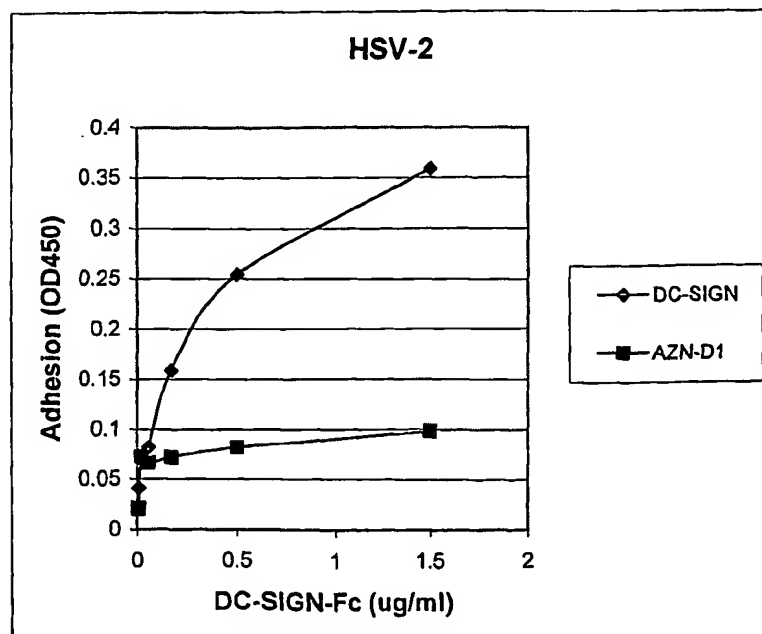
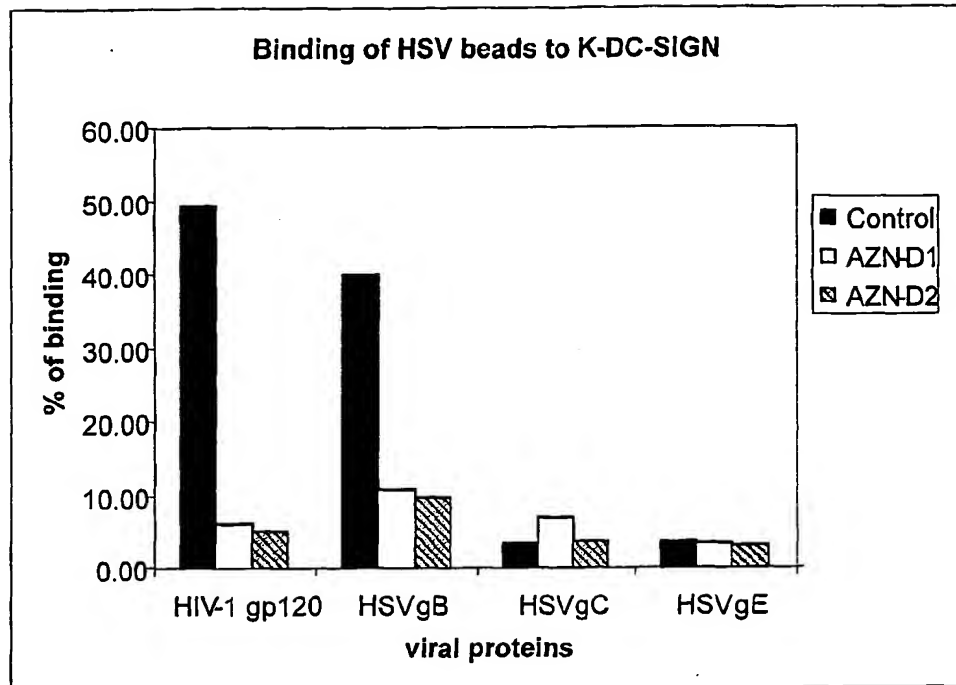


Fig. 32

A



B

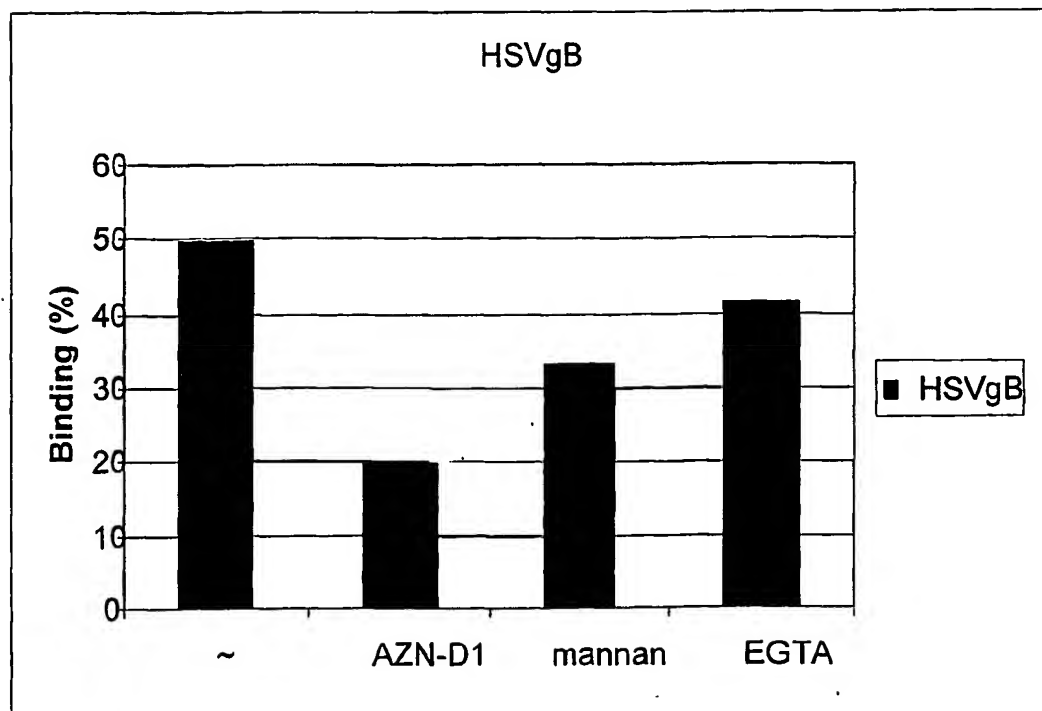
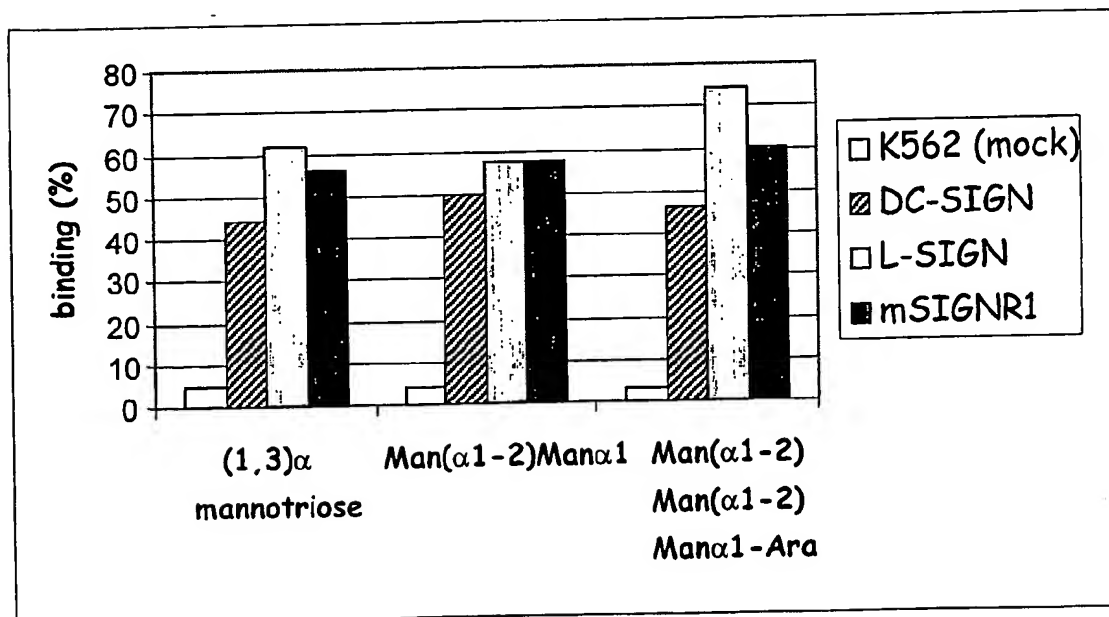


Fig. 33A

**mSIGNR1 binds mannose-containing
carbohydrates,
similar to DC-SIGN and L-SIGN**



DC-SIGN, L-SIGN and mSIGNR1 bind differently to Lewis antigens

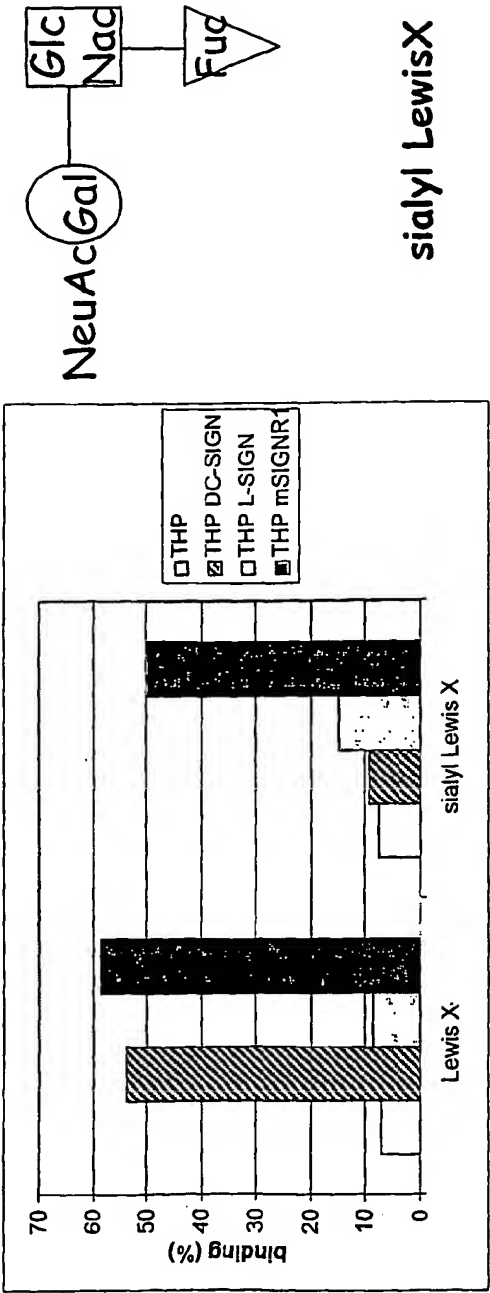


Fig. 33B

Fig. 33C

Carbohydrate specificity of DC-SIGN, L-SIGN and mSIGNR1

	DC-SIGN	L-SIGN	mSIGNR1
LewisX	+	-	+
sialyl LewisX	-	-	+
sulfo LewisX	+	-	+
LewisY	+	+	+
LewisA	+	+	+
sialyl LewisA	-	-	+
sulfo LewisA	+	+	+
LewisB	+	+	+

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Fig. 34

pathogens with mannose-containing
carbohydrates bind mSIGNR1

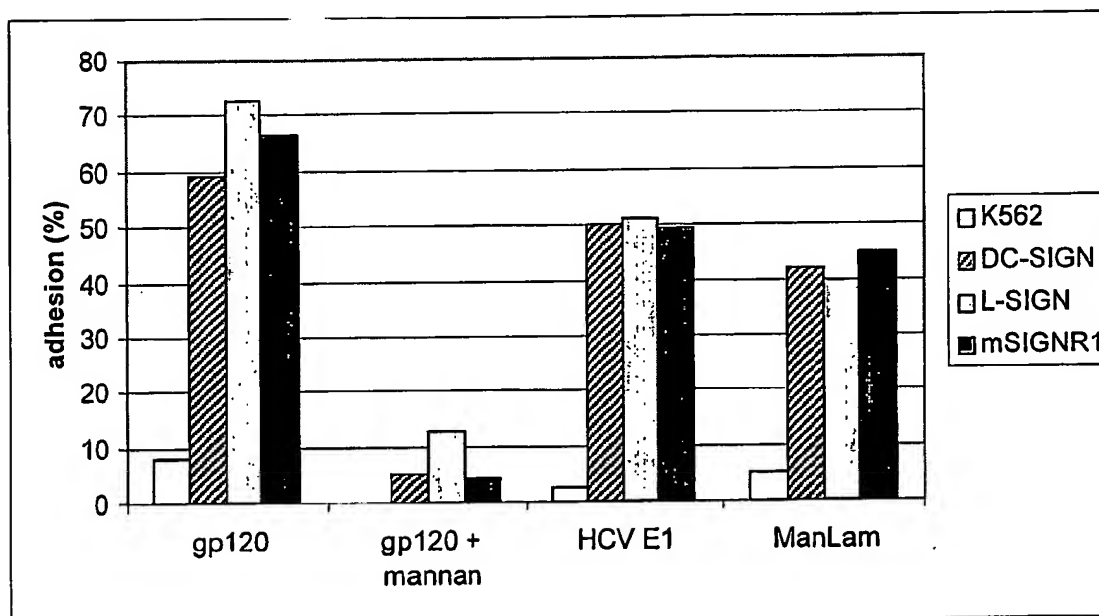


Fig. 35

DC-SIGN-Fc binds HCV-envelope proteins

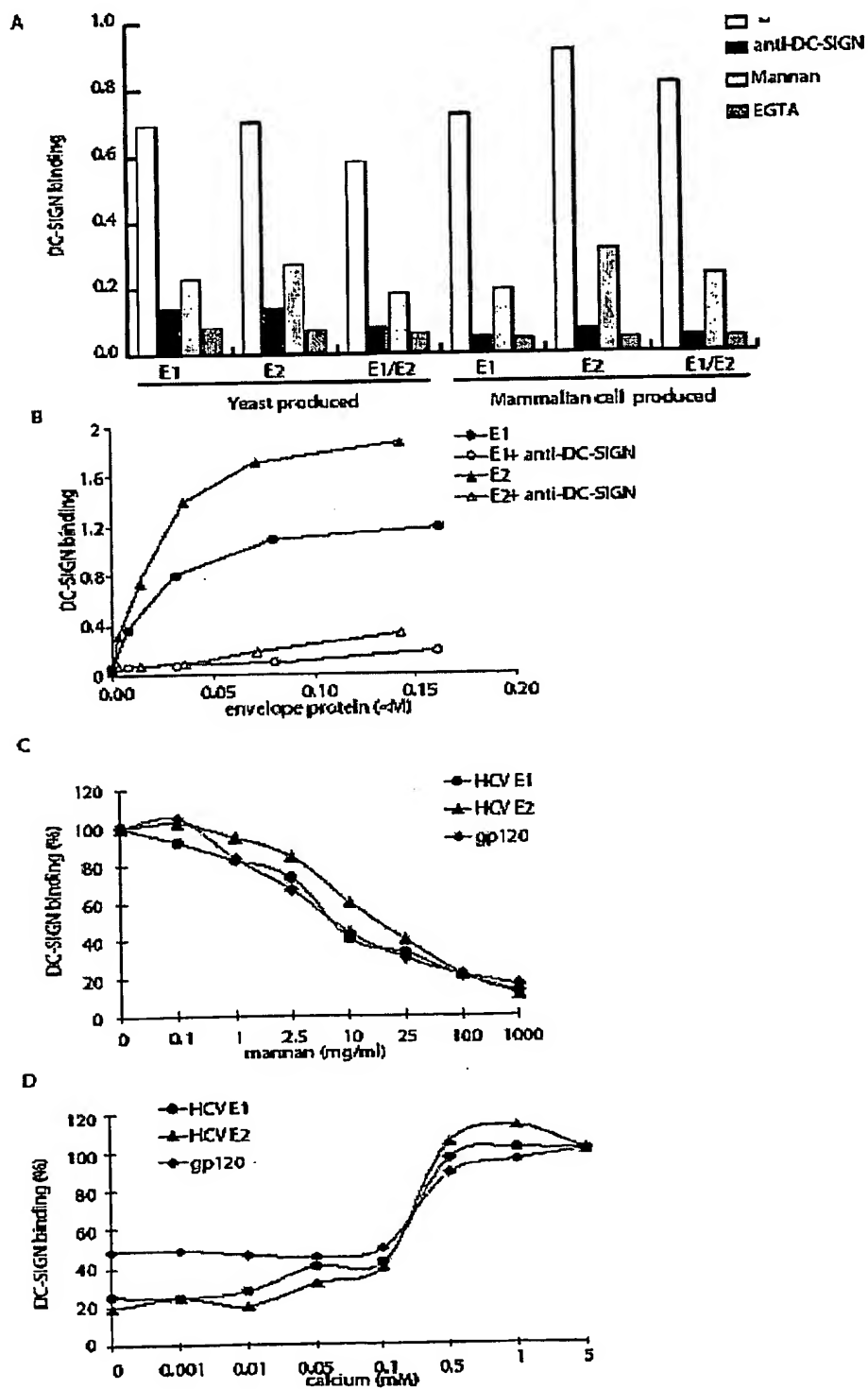
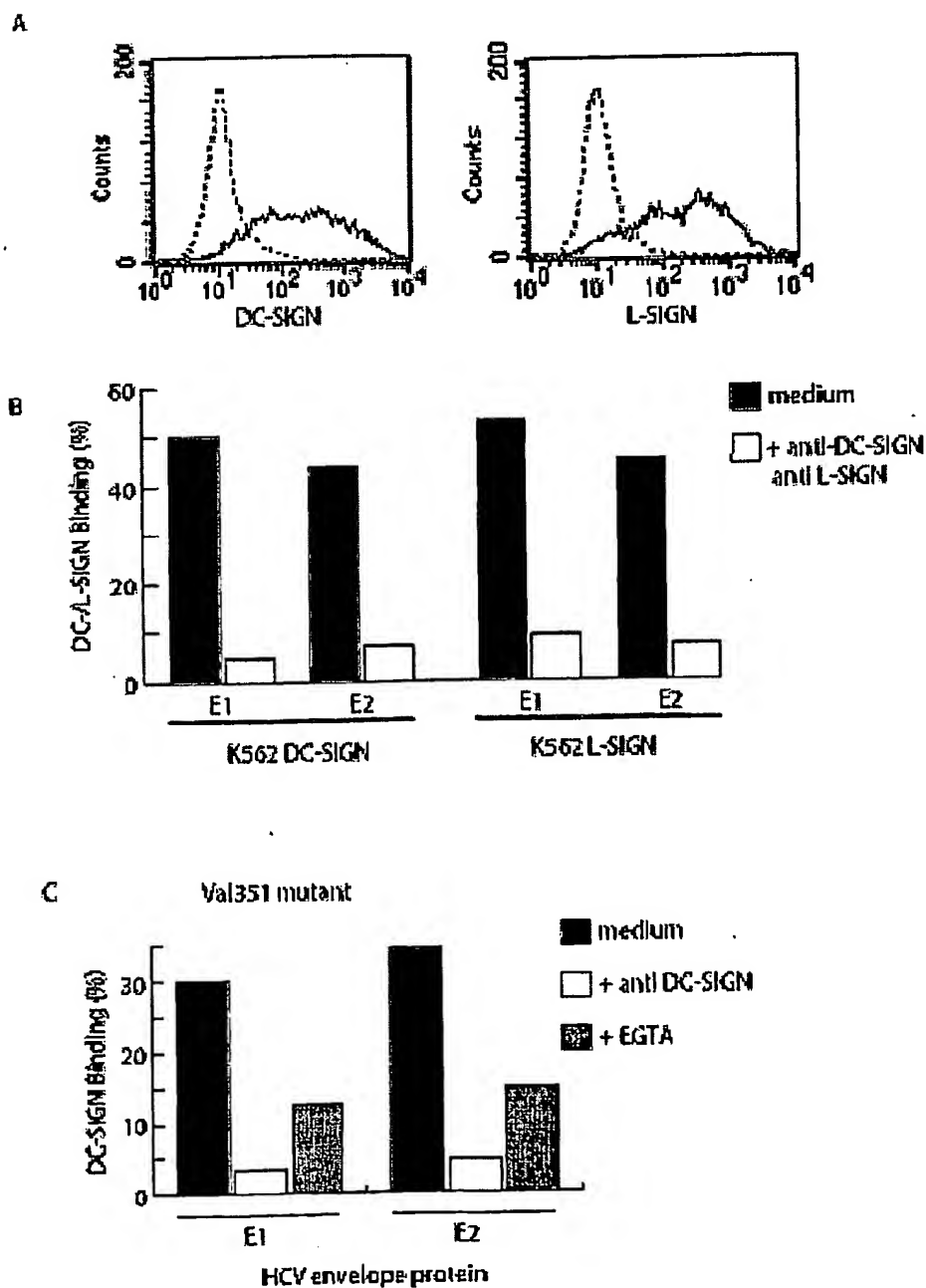


Fig. 36

Cellular DC-SIGN and L-SIGN bind HCV E1 and E2 proteins

DC-SIGN has similar binding site for
gp120 and HCV



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Fig. 36D

Essential amino acid residues in DC-SIGN binding to its ligands gp120
and HCV envelope proteins

DC-SIGN mutant	Adhesion			
	gp120	HCV E1	HCV E2	HCV E1/E2
	%	%	%	%
Wild type	45	50	45	50
E347Q	4	3	7	7
N349D	0	5	9	7
N365D	0	5	9	9
D366A	3	4	5	6
D320A	7	4	6	5
E324A	0	4	7	6
N350A	1	4	8	5
D355A	2	4	8	7

Stable K562 transfectants

Fig. 37

HCV is internalized by DC-SIGN and L-SIGN;
internalization pathway depends on cell-line

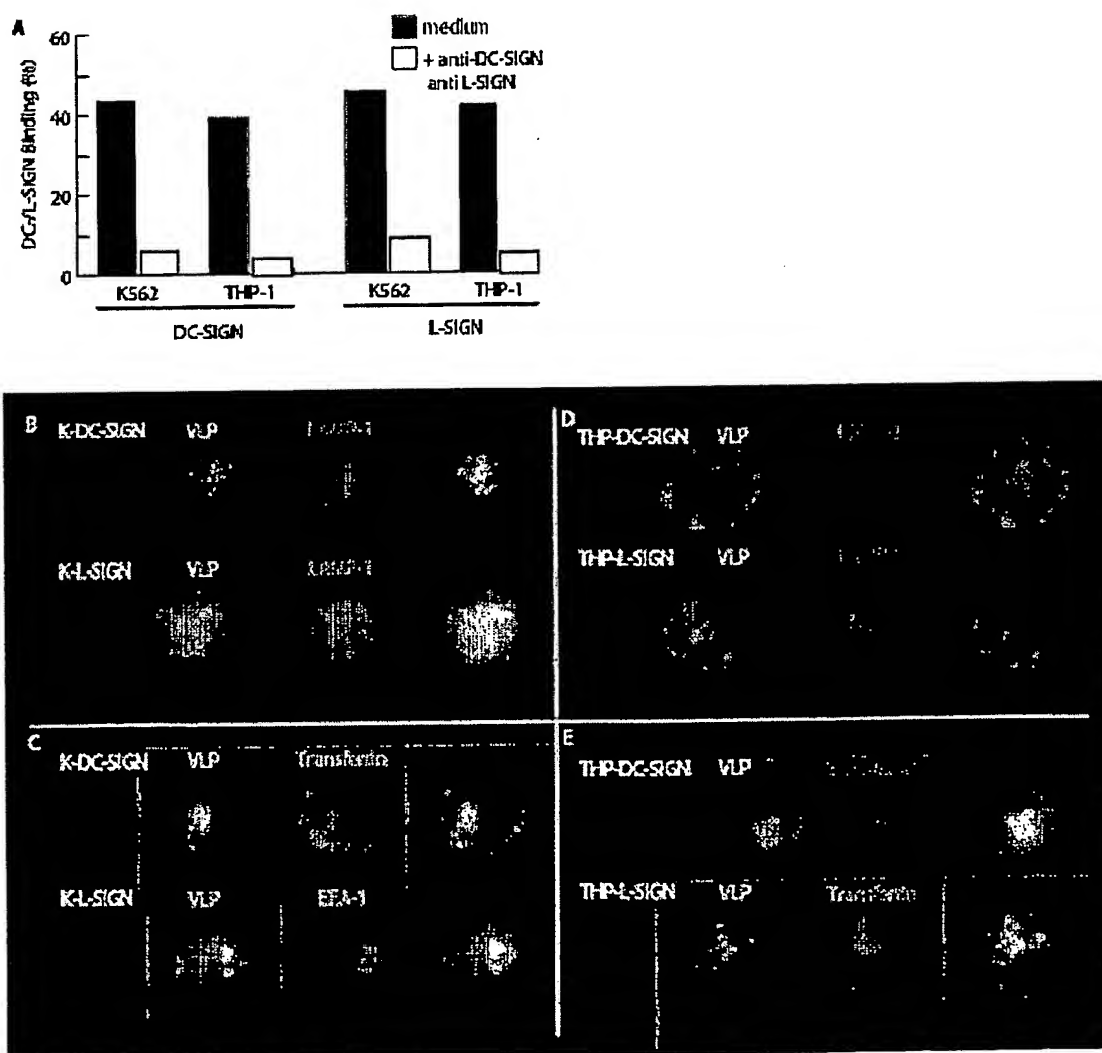


Fig. 38

Immature and mature DC bind HCV via DC-SIGN

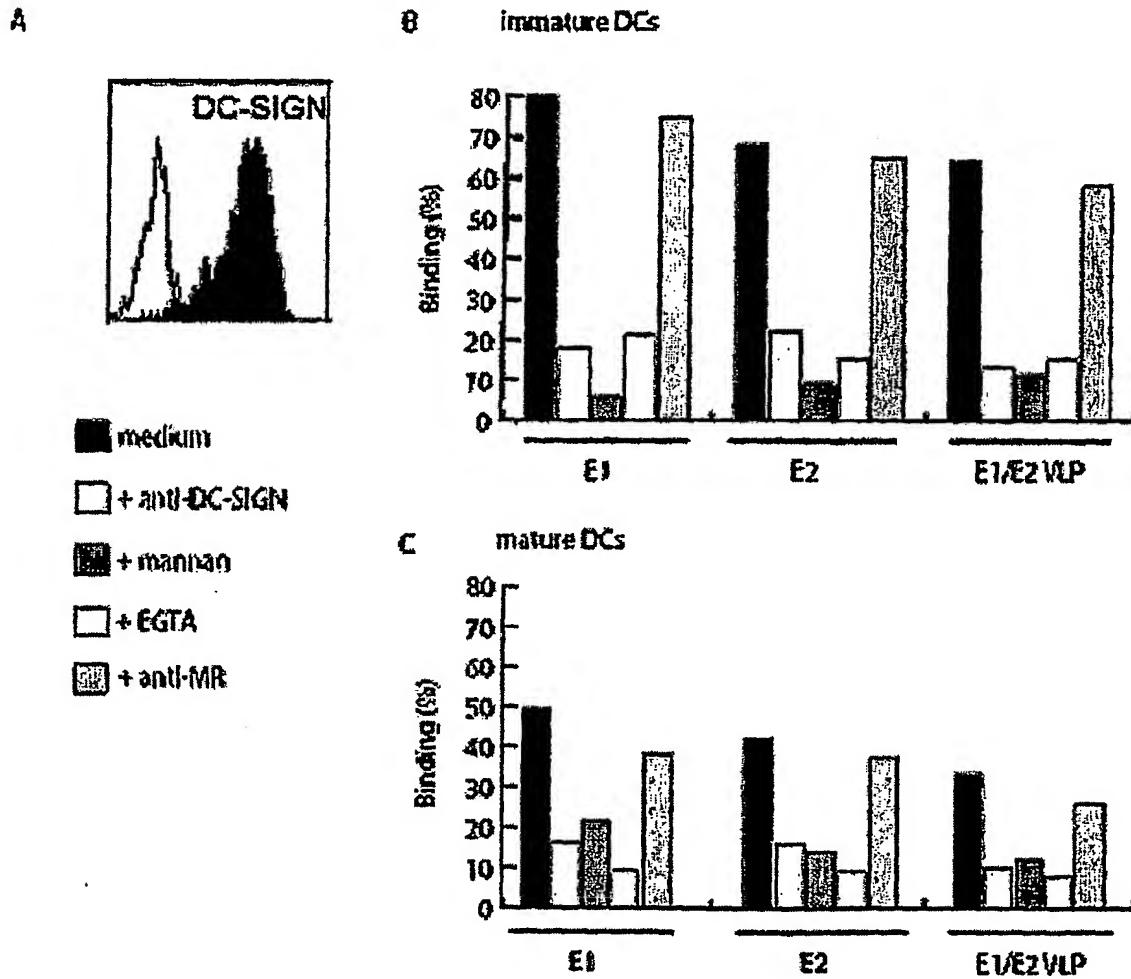
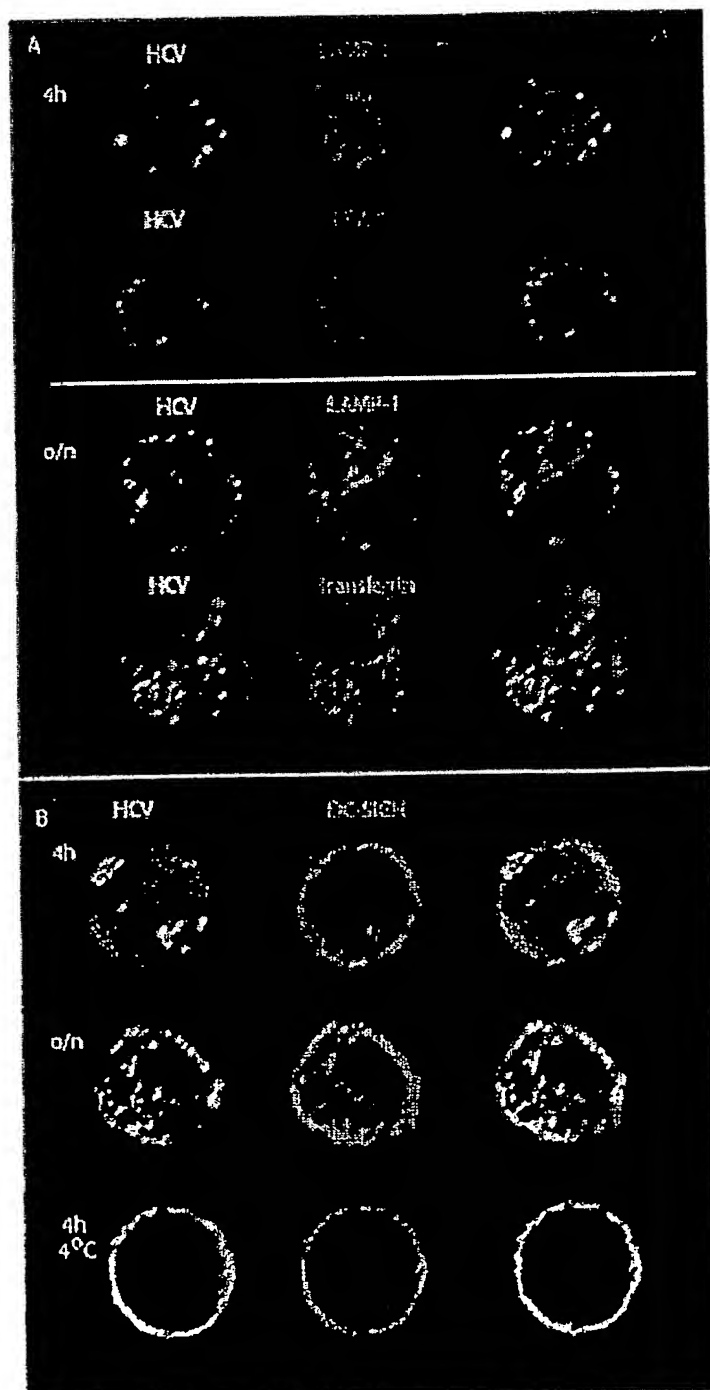


Fig. 39

Immature DC capture and internalize HCV through DC-SIGN; HCV is targeted to the early endosomes



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Fig. 40

Immature DC internalize carbohydrates
via DC-SIGN

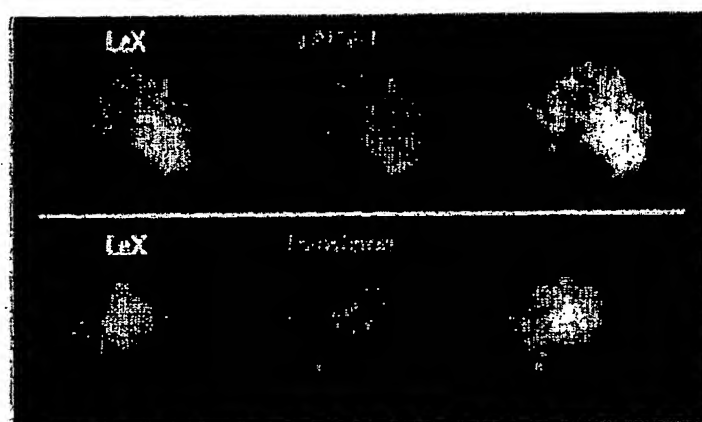


Fig. 41

HCV binding to Liver sections

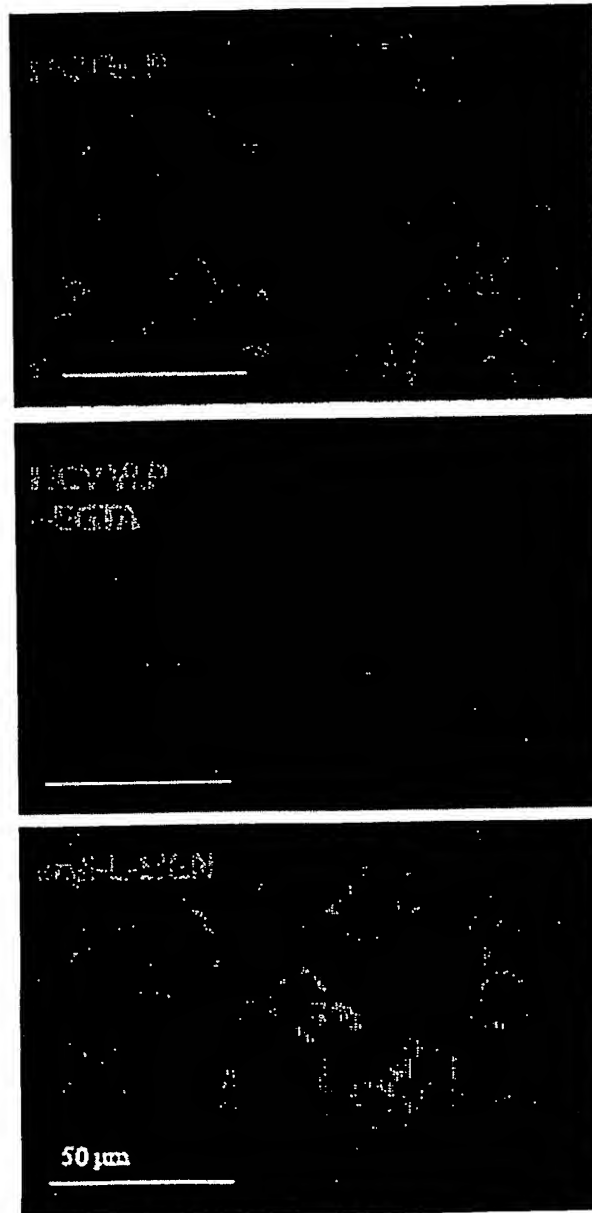


Fig. 42

Lewis blood group antigens and some of their substructures bind to DC-SIGN.

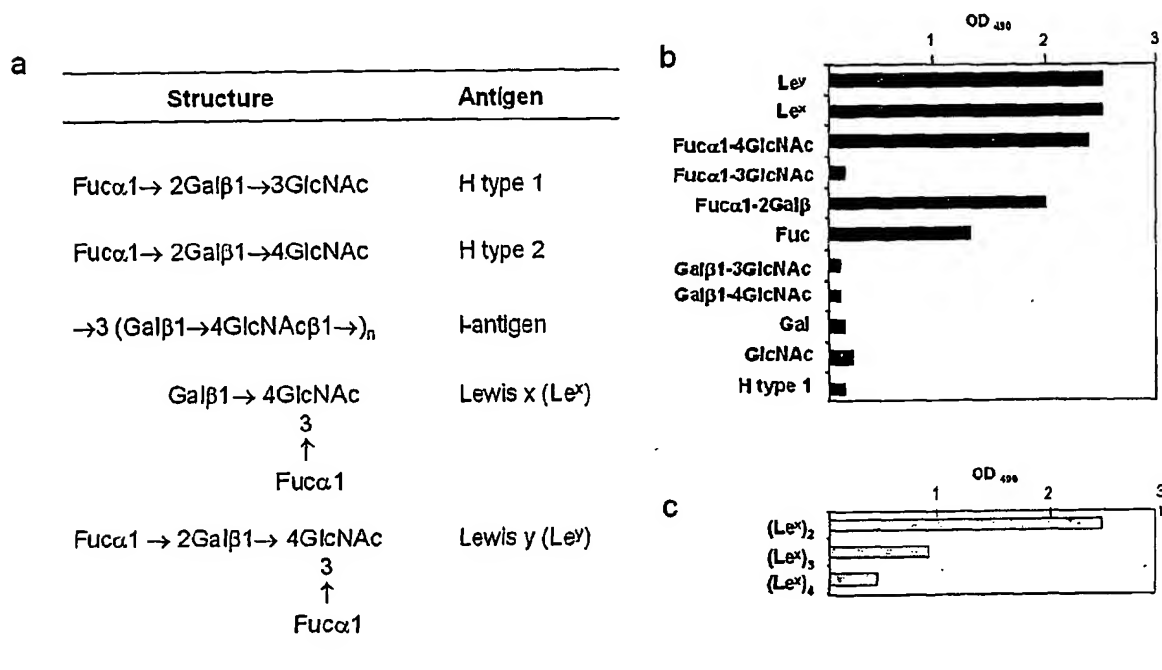


Fig. 43

Binding of *H. pylori* is dependent on Lewis antigen expression.

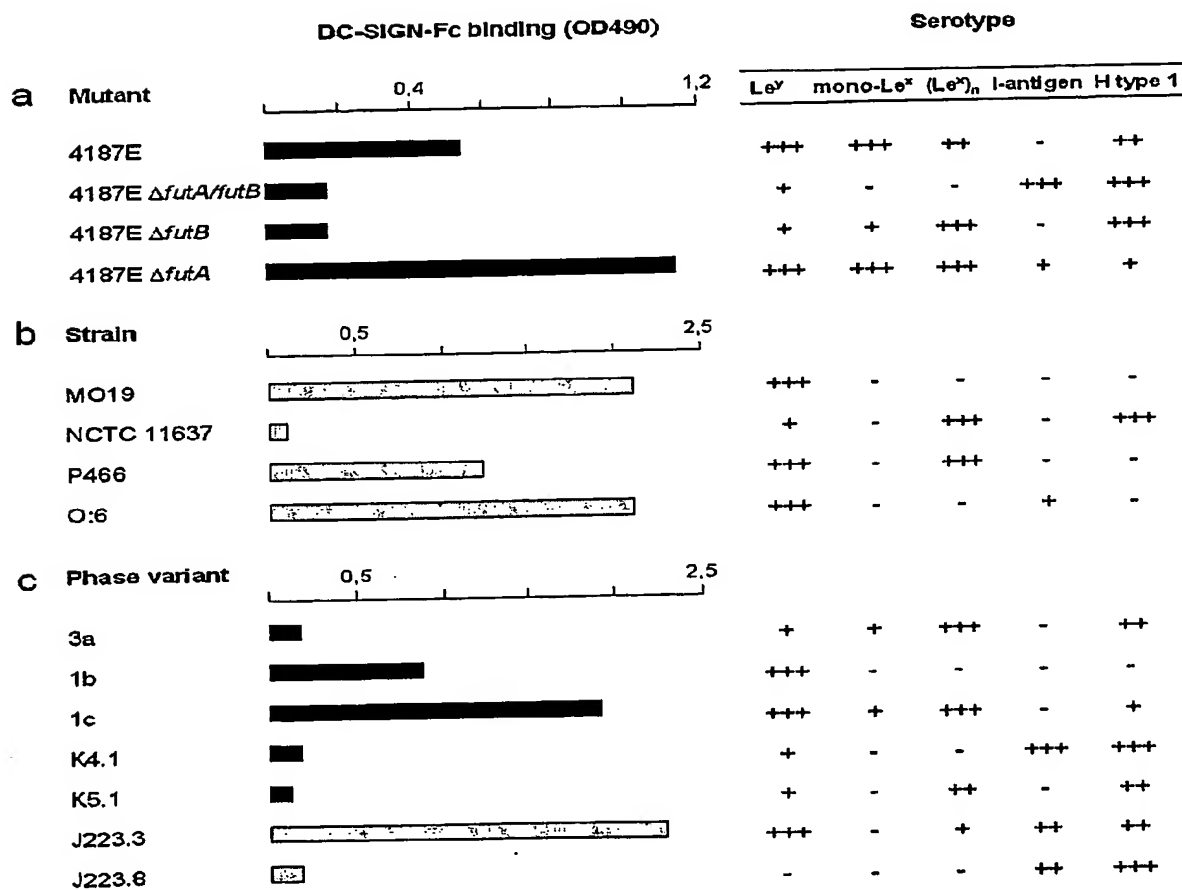


Fig. 44

LPS phase variation in *H. pylori* occurs in vivo.

a	Strain	Number of colonies (%)	Serotype				
			Le ^y	mono-Le ^x	(Le ^x) _n	i-antigen	H type 1
	J223.3	6/30 (20)	+++	-	++	++	+++
	J223.8	24/30 (80)	-	-	-	+++	+++

b	Strain	Length of C-tract in gene		Serotype				
		<i>futA</i>	<i>futB</i>	Le ^y	mono-Le ^x	(Le ^x) _n	i-antigen	H type 1
	J223.3	n=9 ("off")	n=10 ("on")	+++	-	++	++	+++
	J223.8	n=9 ("off")	n=9 ("off")	-	-	-	+++	+++
	J223.3 Δ <i>futB</i>	N.D.	N.D.	-	-	-	+++	+++

c	J223.3		<i>futA</i>		J223.3		<i>futB</i>	
	1	61	1	61	1	61	1	61
	ATGTTCCAAC	CCCTATTAGA	CGCCTTCATA	GAAAGCGCTT	CCATTGAAAA	AATGGCCTCT	AAATCTCCCC	CCCCCTAA (STOP)
	AAATCTCCCC	CCCCCTAA (STOP)			AAATCTCCCC	CCCCCTAA (STOP)		
	AAATCTCCCC	CCCCCTAA (STOP)			AAATCTCCCC	CCCCCTAA (STOP)		

Fig. 45

DC-SIGN is expressed on gastric DCs and is the major receptor for Le positive *H. pylori*.

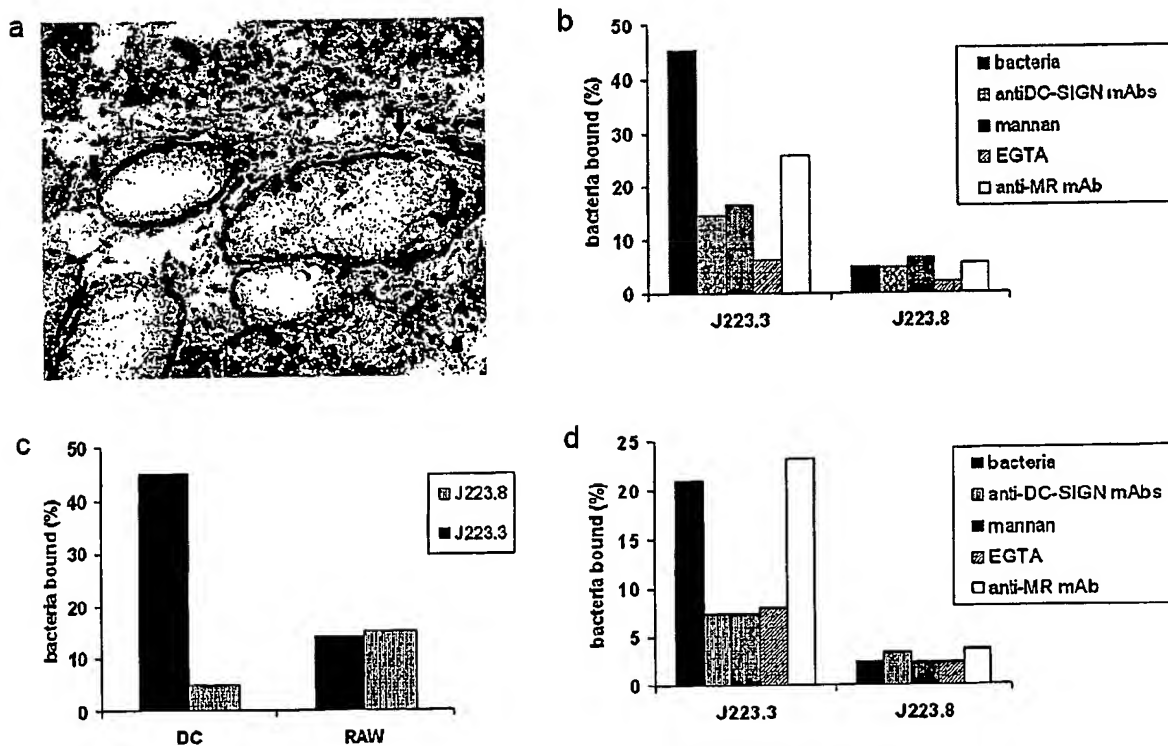
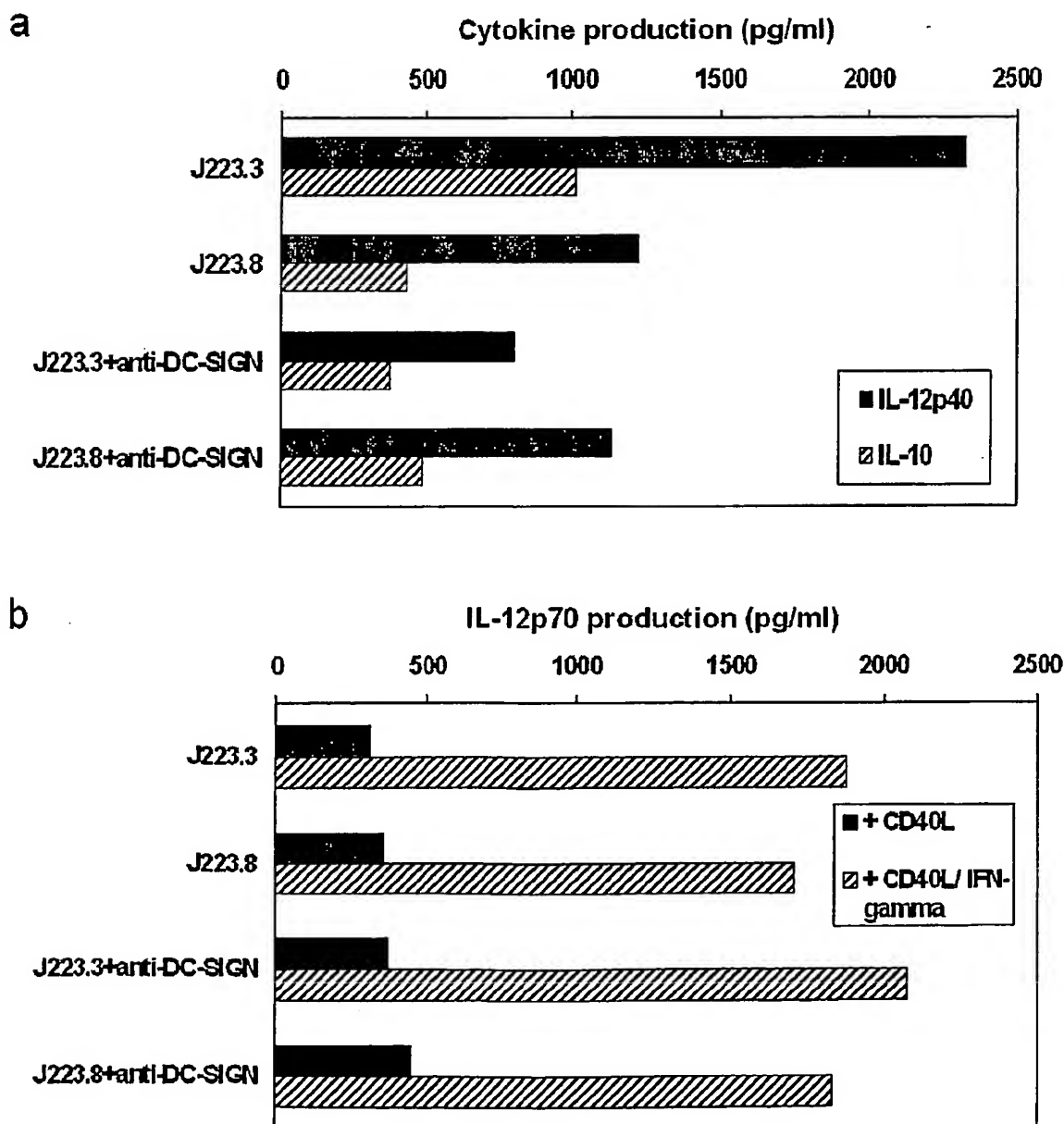


Fig. 46

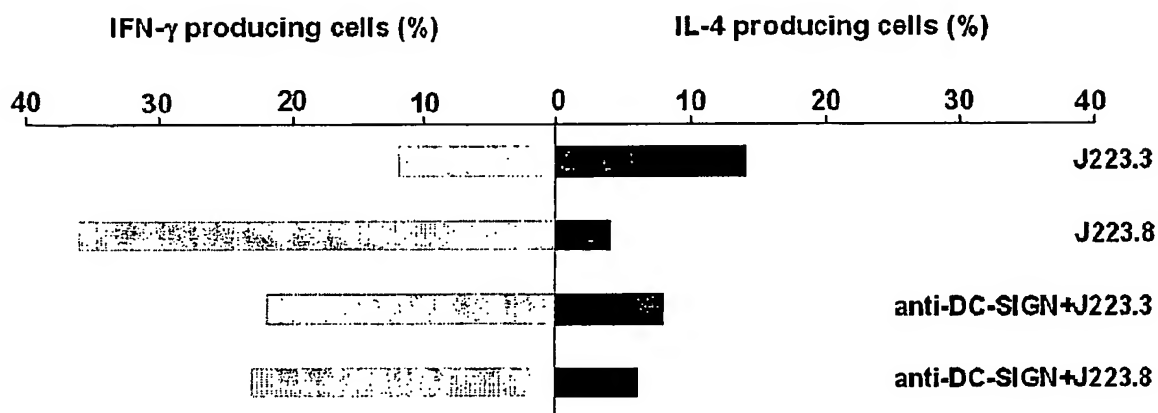
Binding of *H. pylori* to induces DC-SIGN-dependent increase of IL-10 and IL-12 production, but no changes in IL12p70.



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Fig. 47

**Binding of *H. pylori* to DC-SIGN induces
skewing of naïve T cells to Th2.**



Lactobacilli induce partial DC maturation

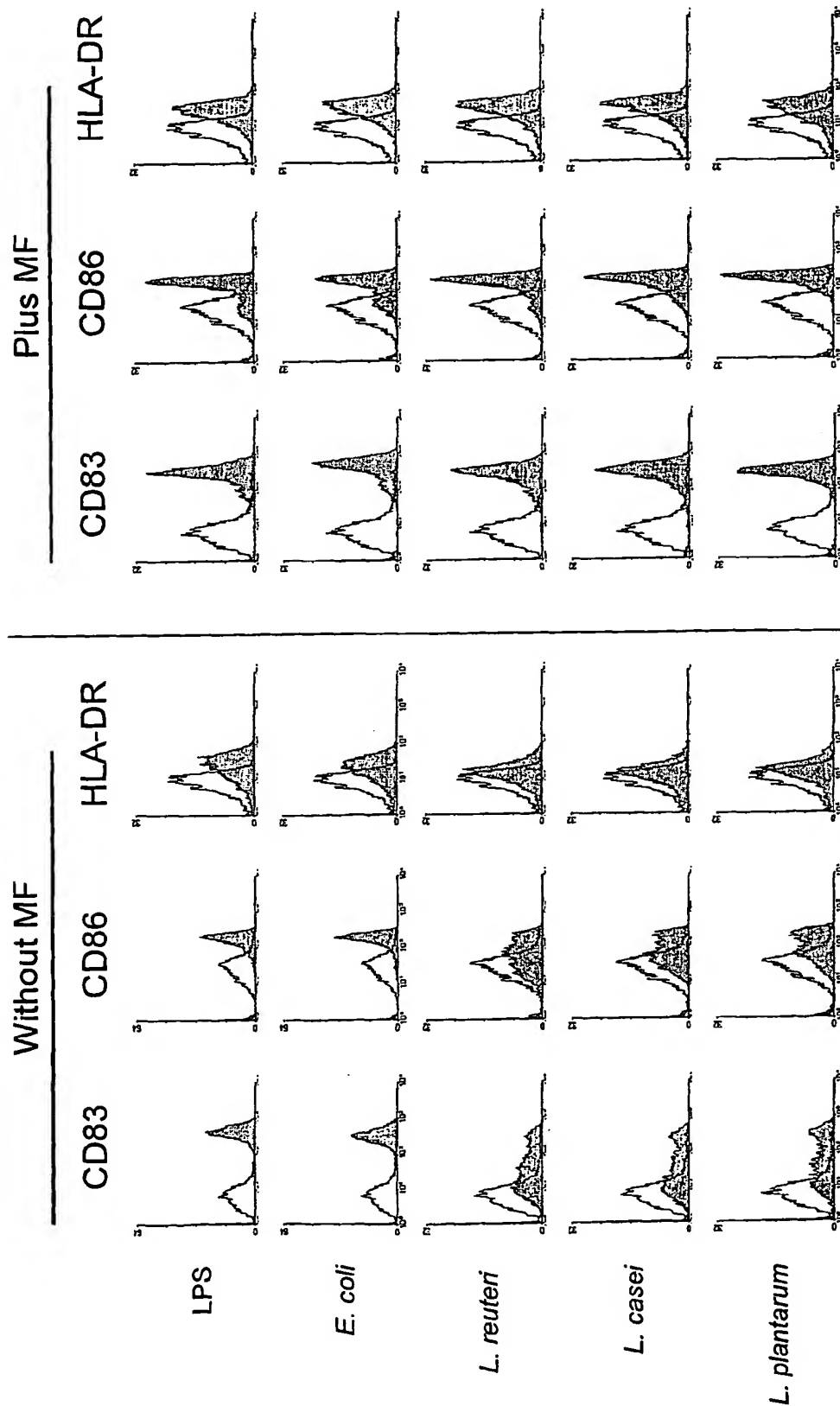


Fig. 48A

Cytokine profiles induced on DC by lactobacilli

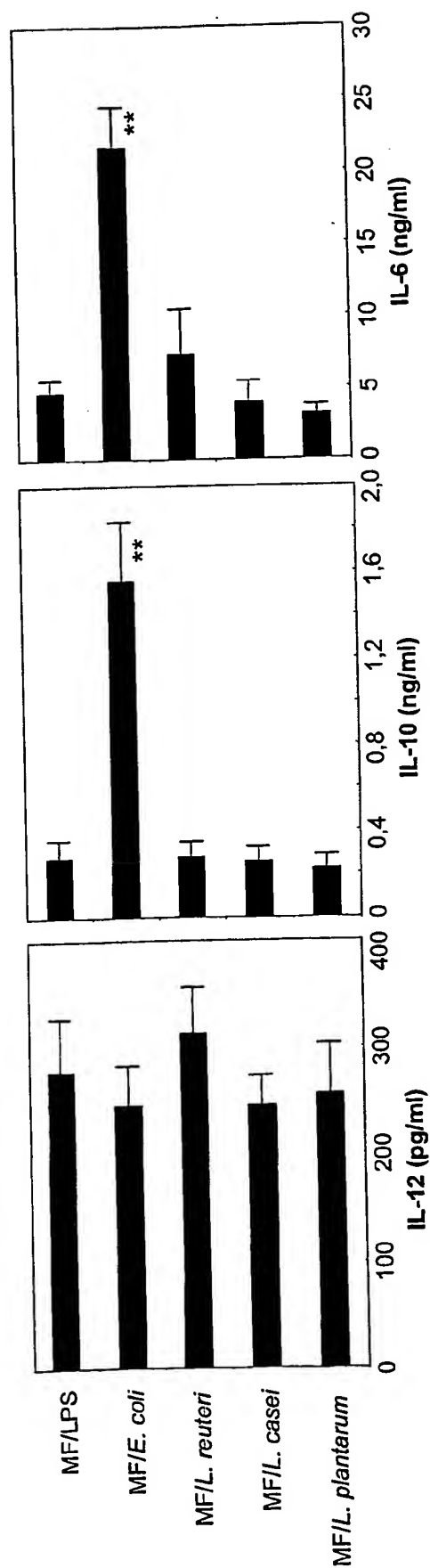


Fig. 48B

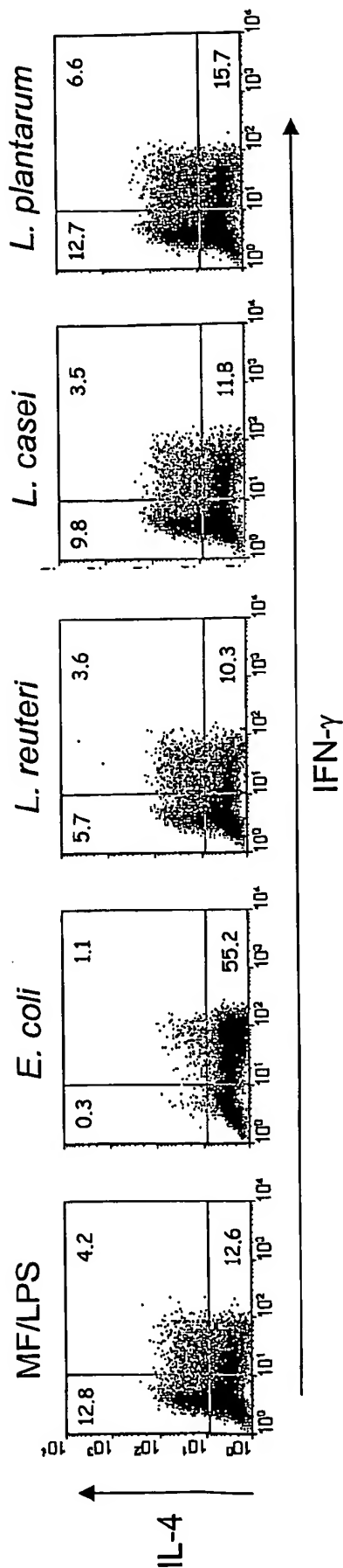


Fig. 49A

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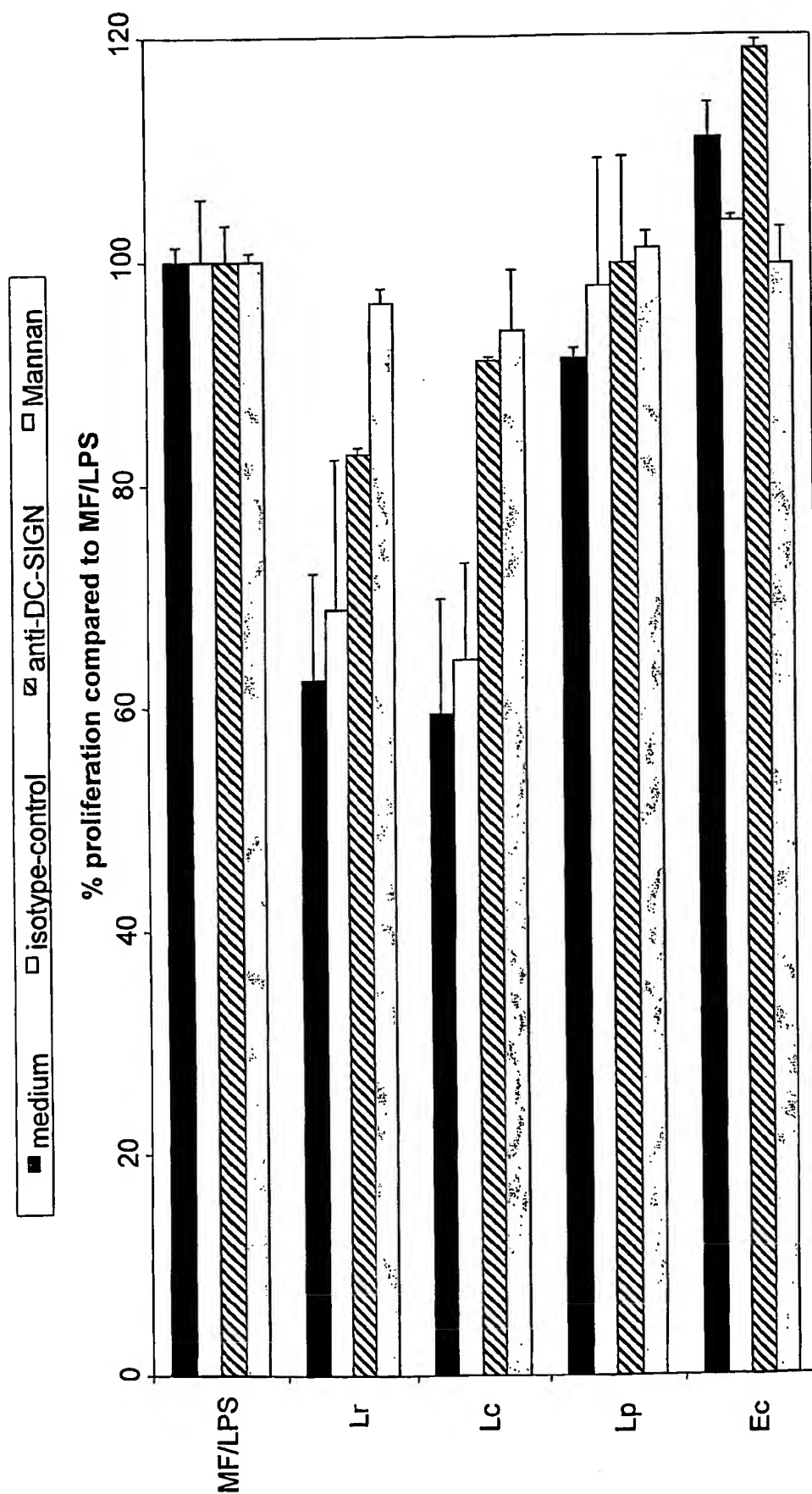
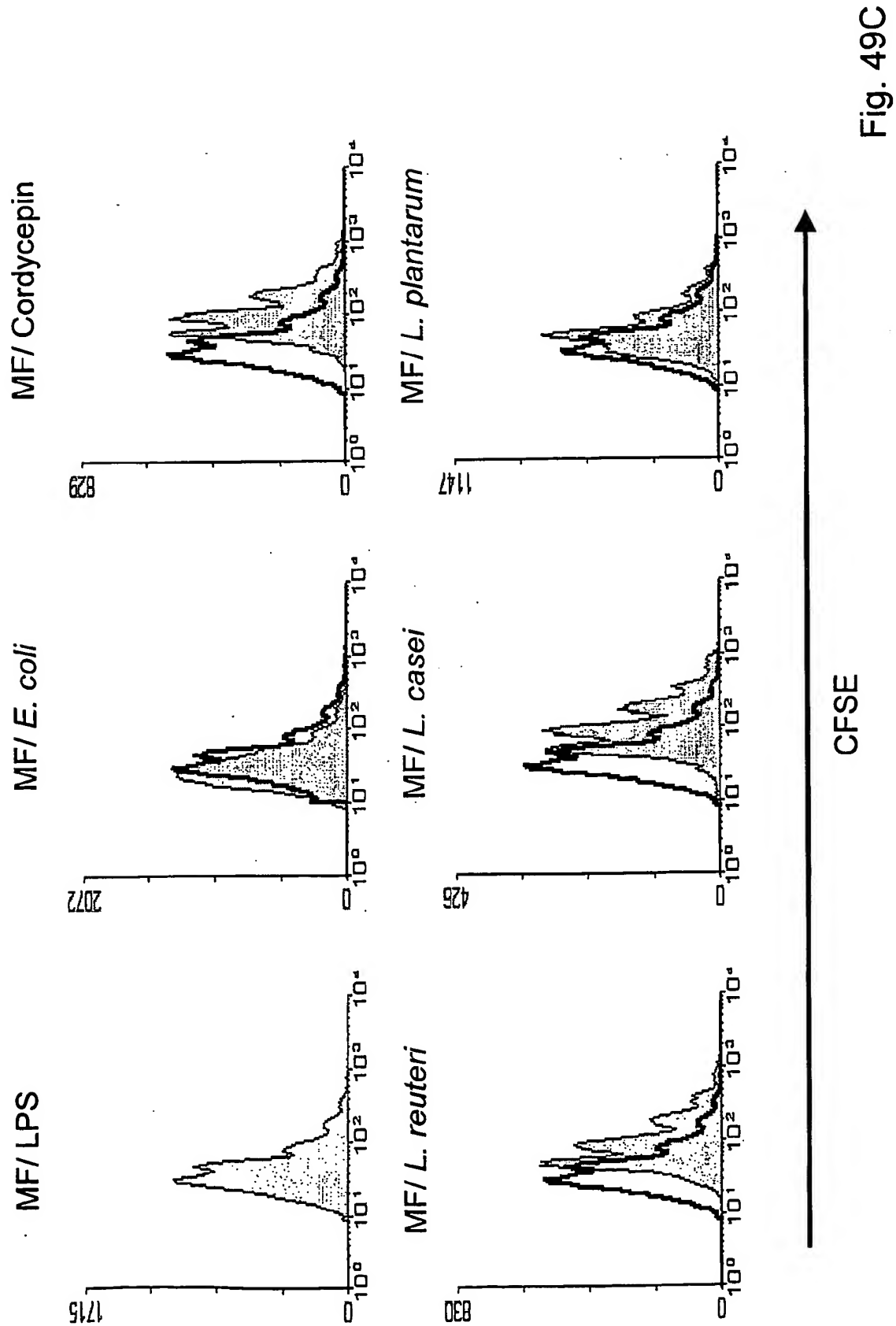


Fig. 49B



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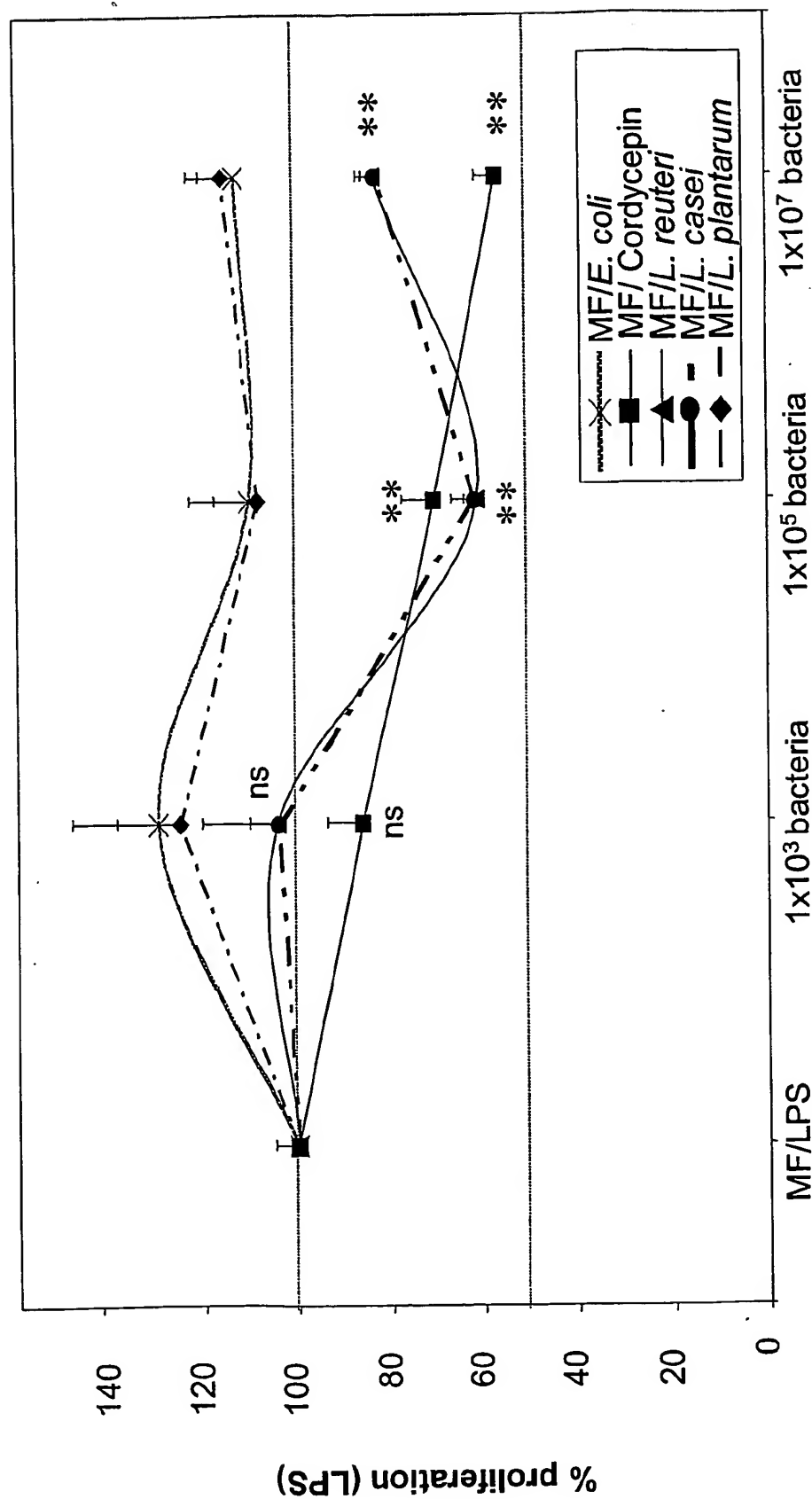
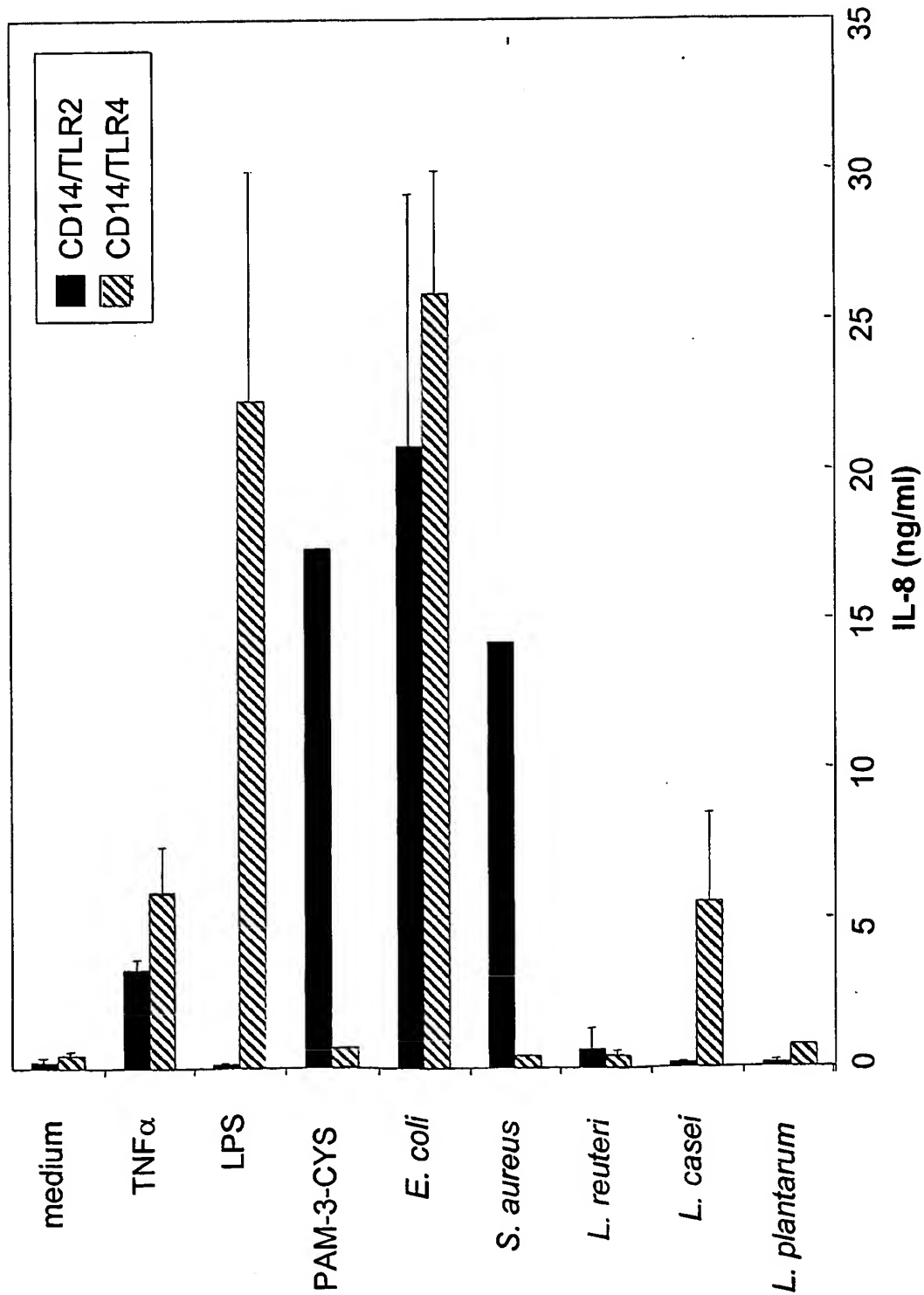


Fig. 49D

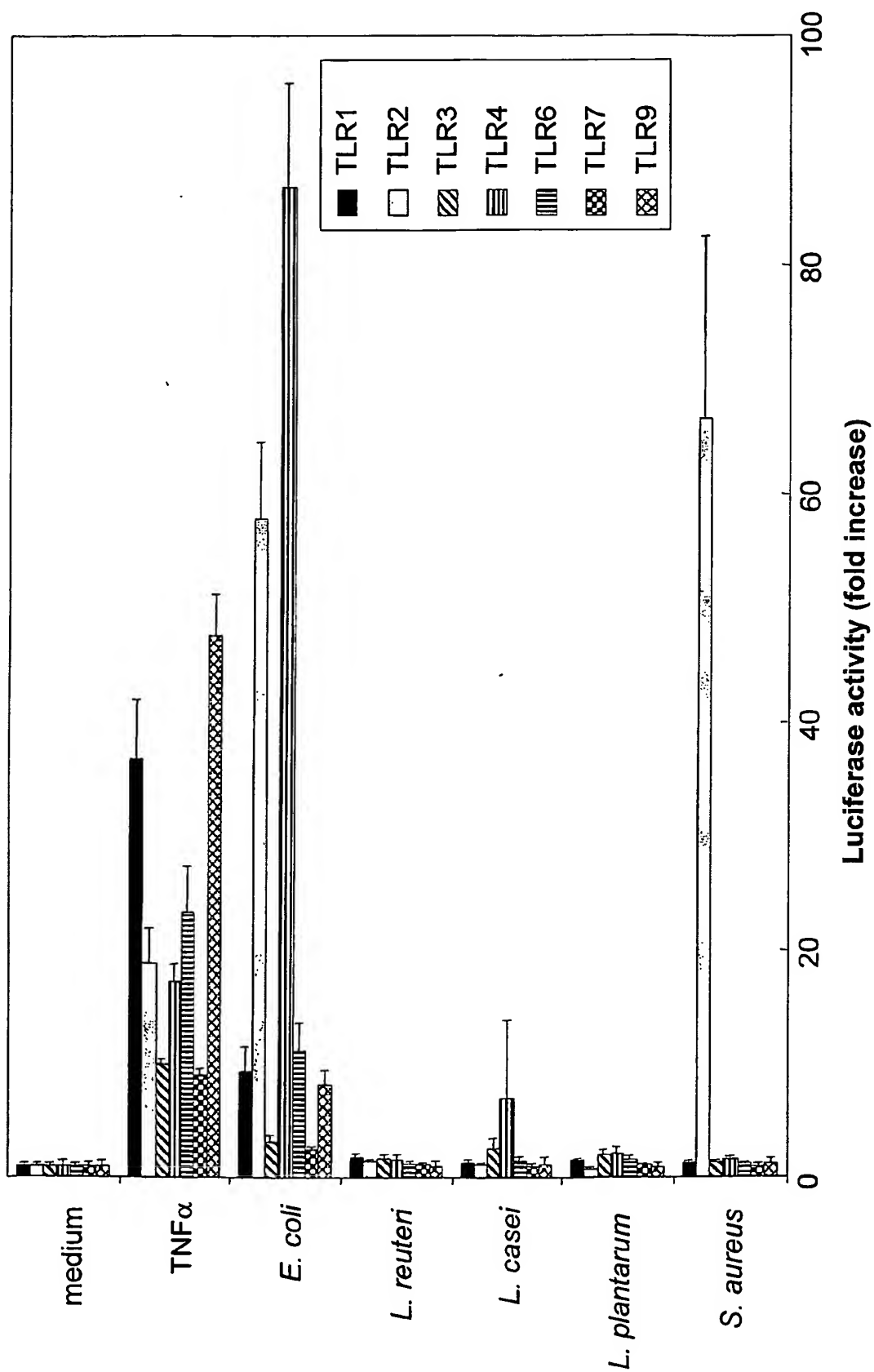
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Fig. 50A



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Fig. 50B



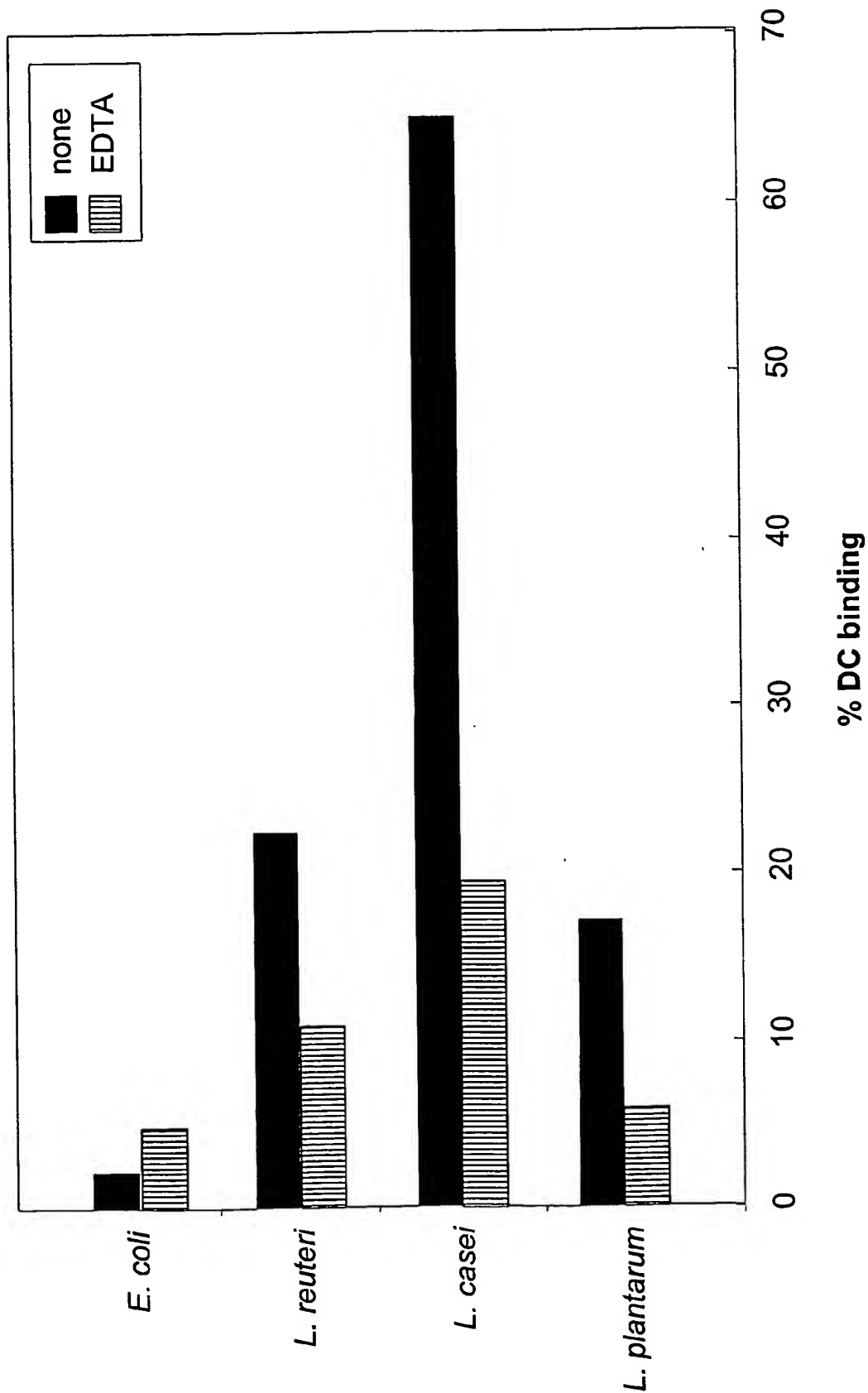


Fig. 51A

Binding probiotic bacteria to DC-SIGN transflectants

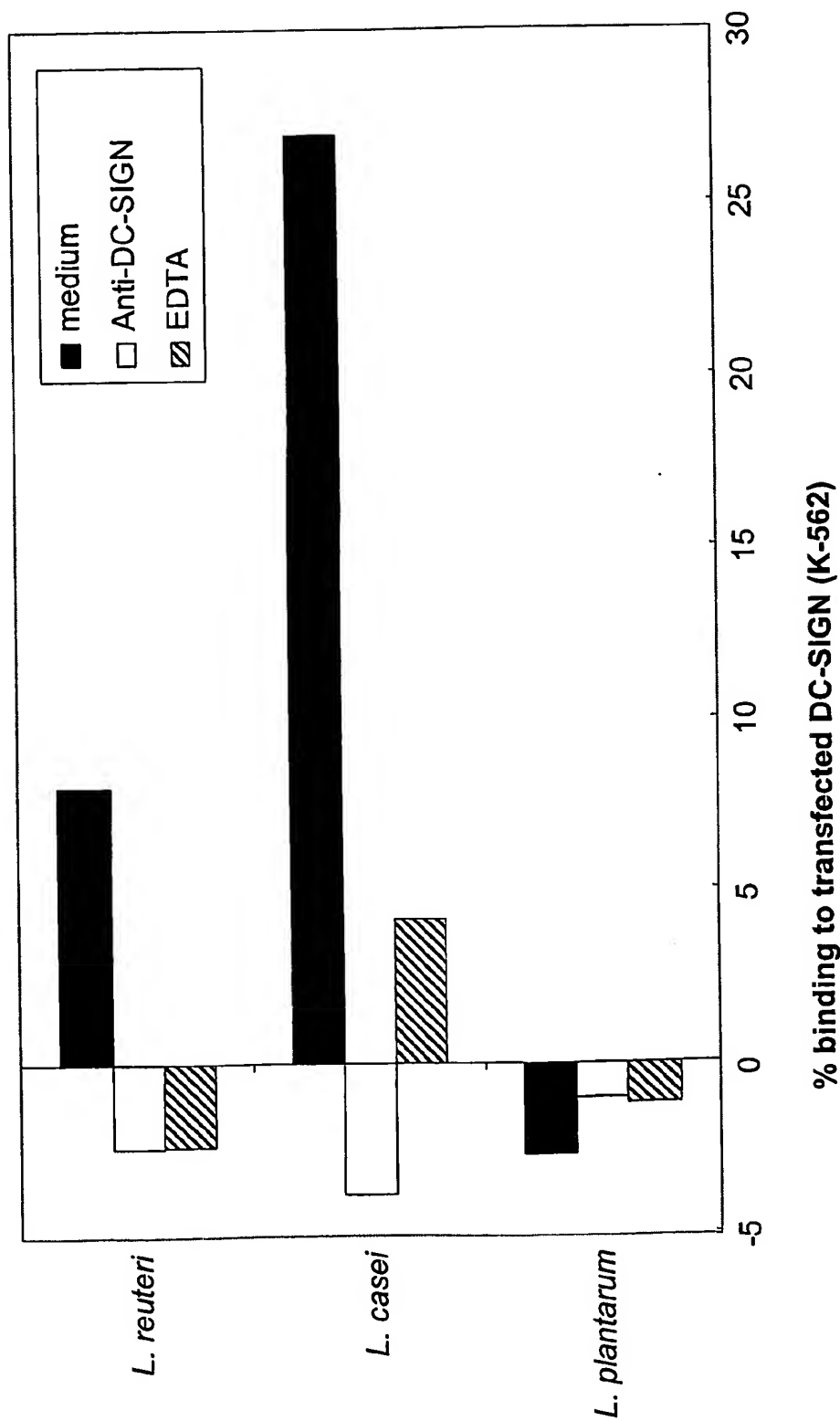
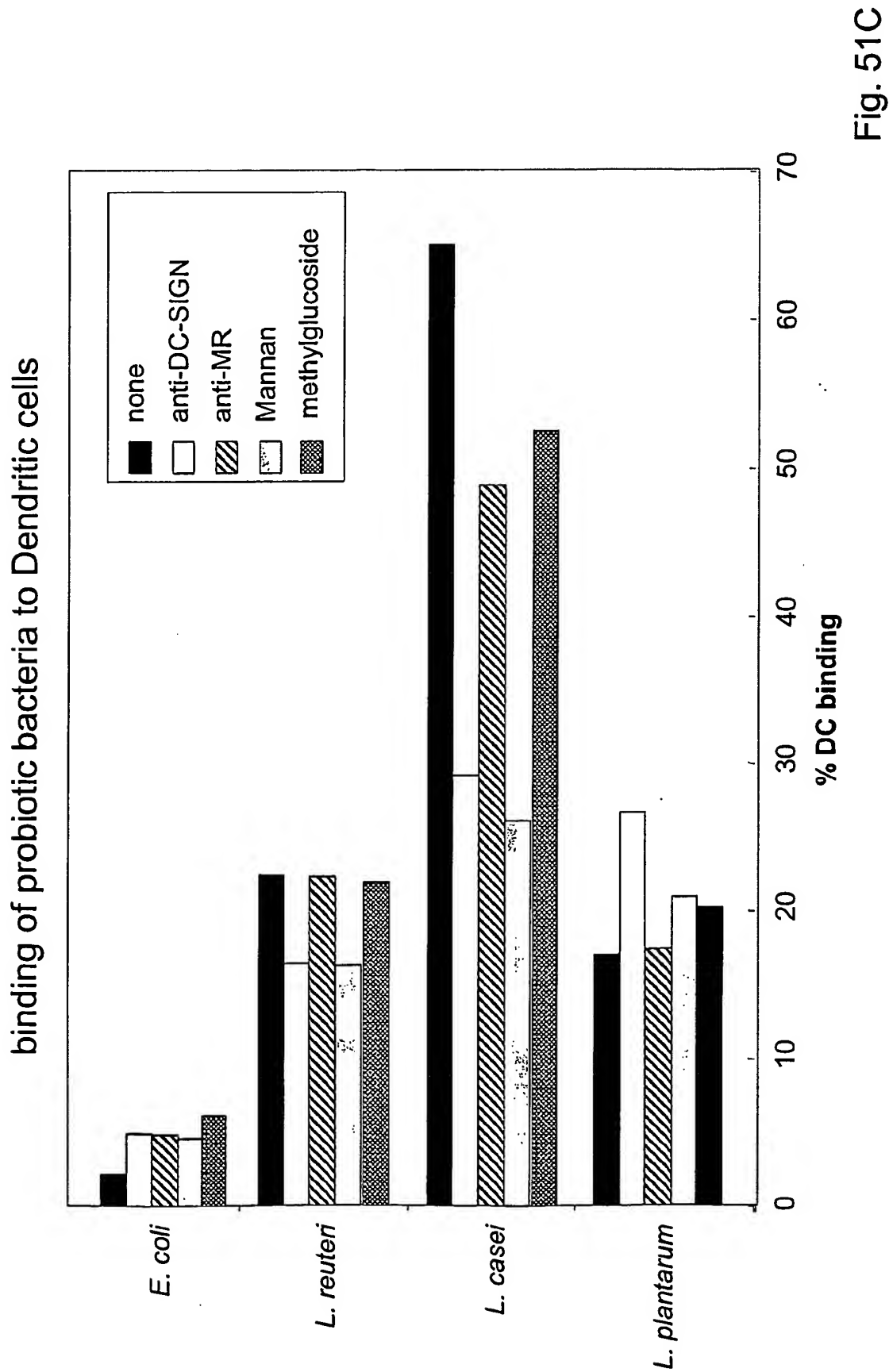


Fig. 51B

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Induction of T reg cells through targeting DC-SIGN by probiotic bacteria

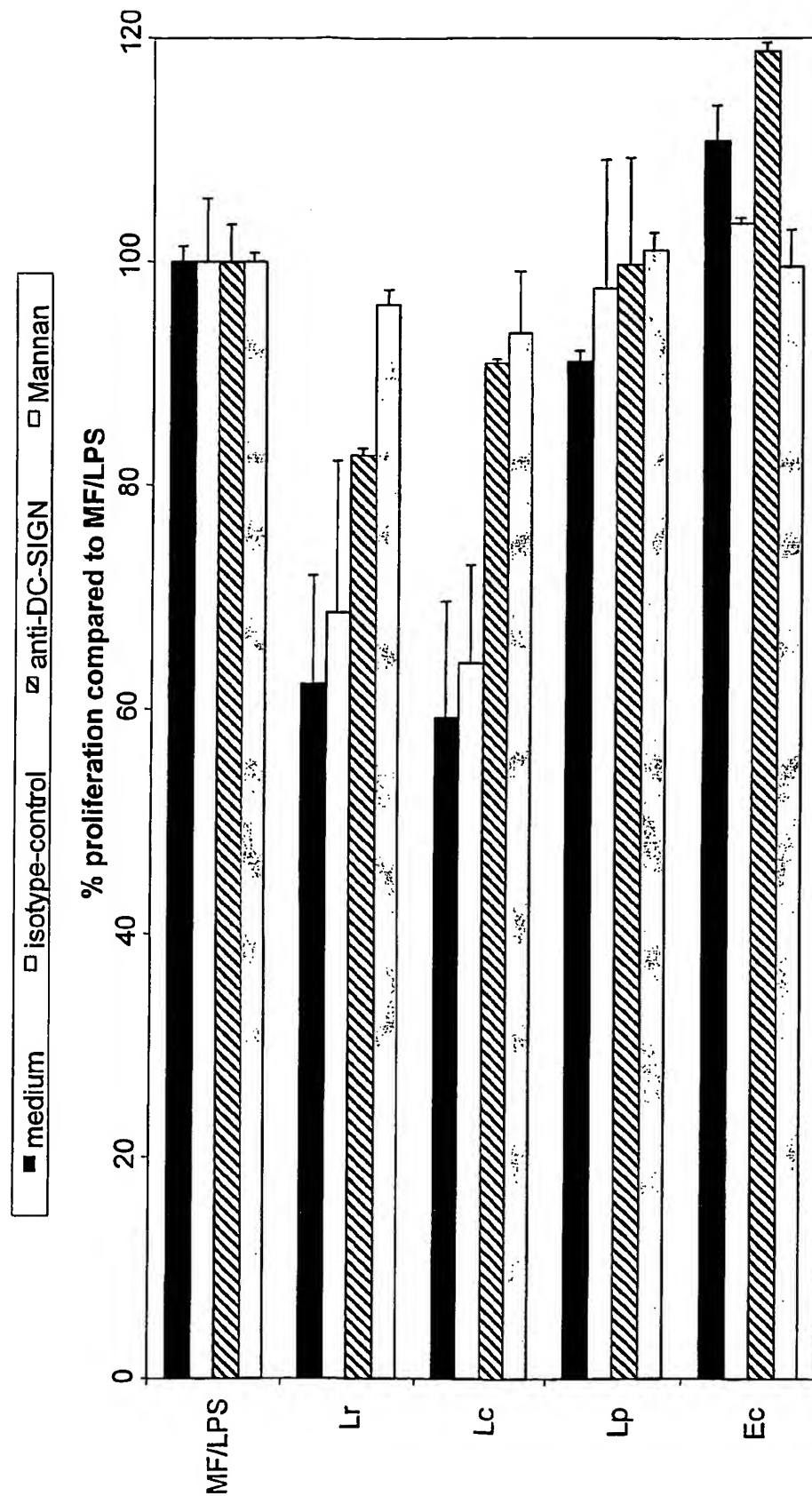
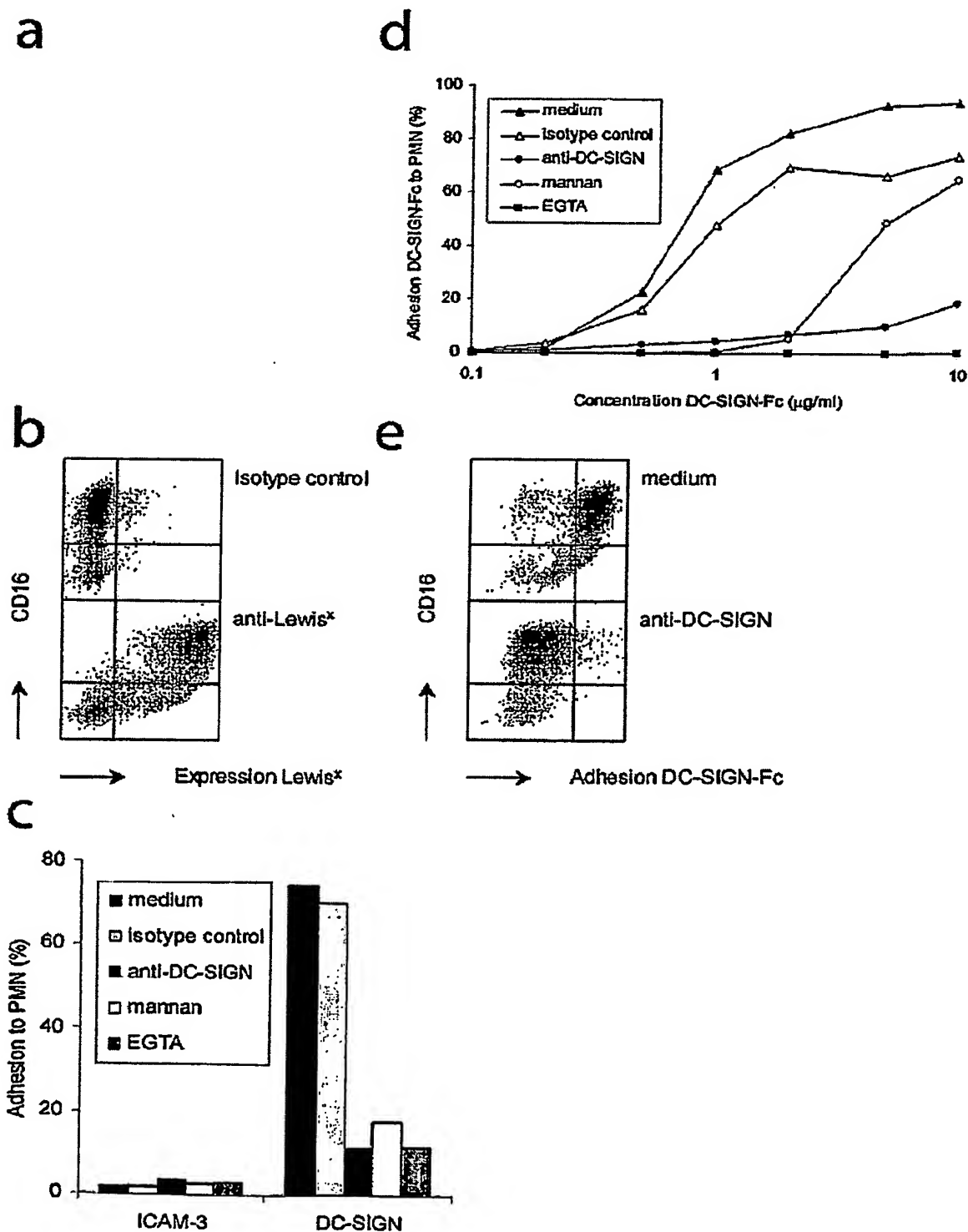


Fig. 52

Fig. 53

PMN express the DC-SIGN ligand Lewis^x and bind with high affinity to recombinant DC-SIGN.



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Fig. 54

CEACAM1 expressed on PMN is a ligand of DC-SIGN and binds through its Lewis^x moieties.

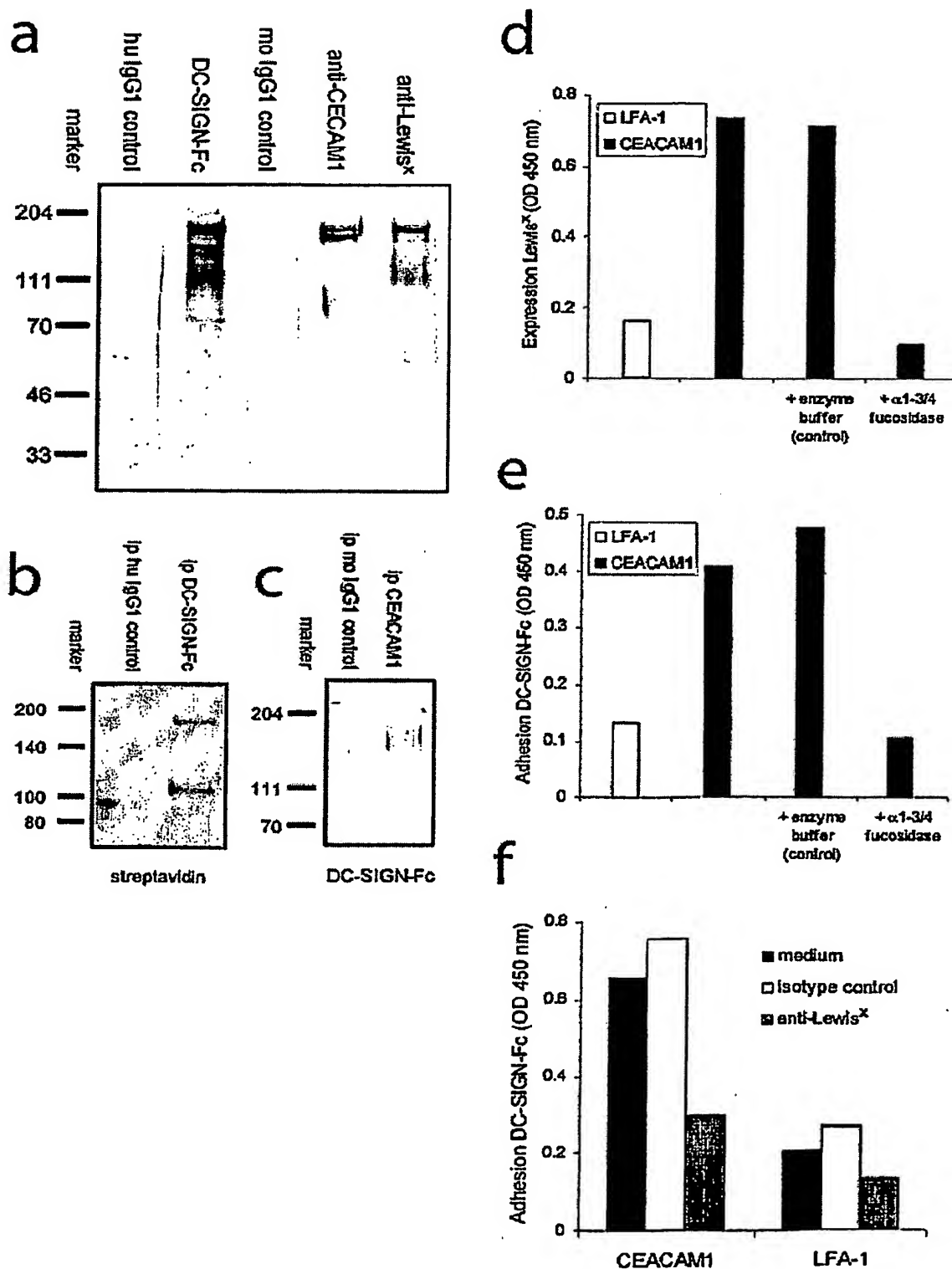
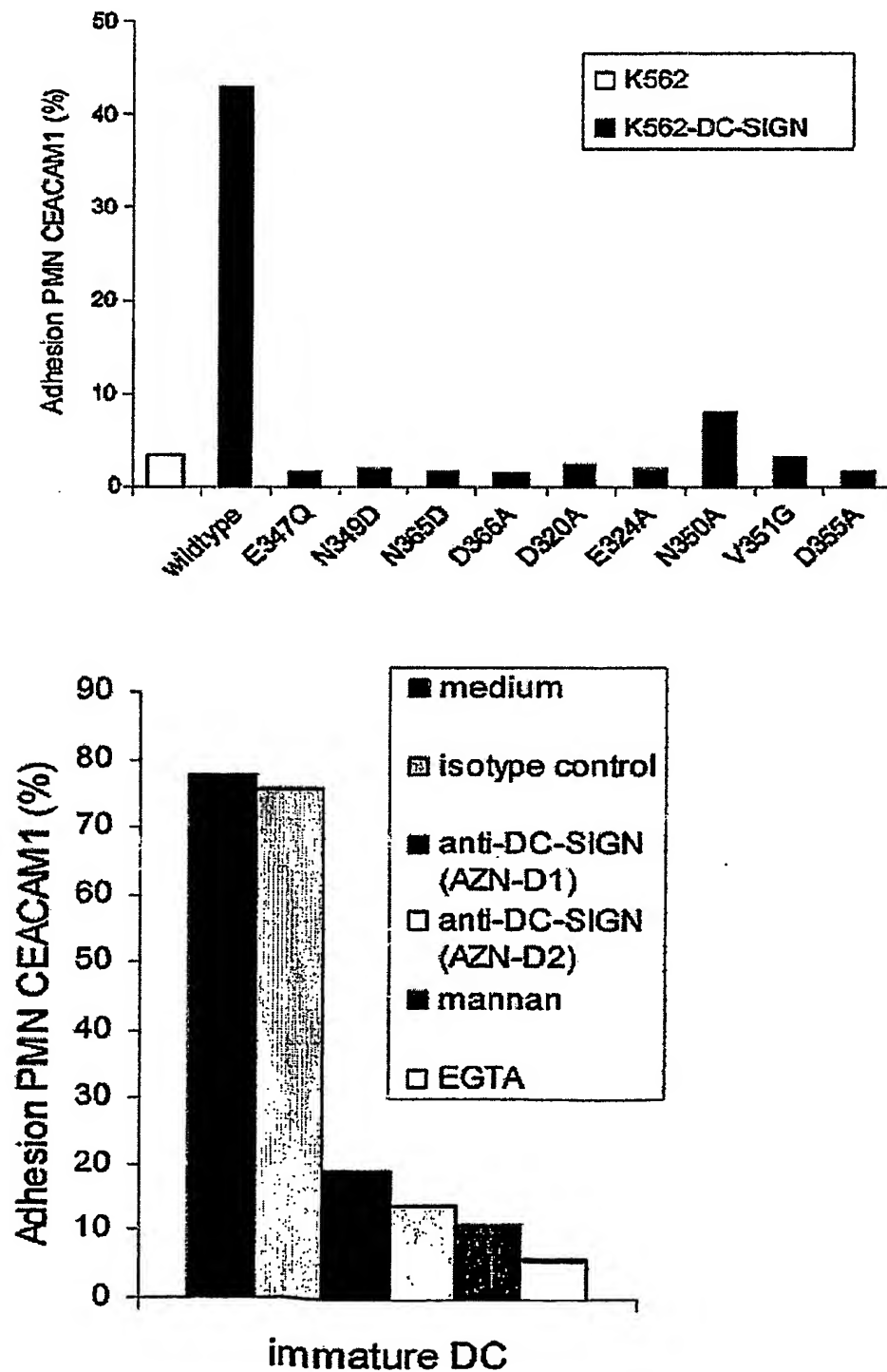


Fig. 55

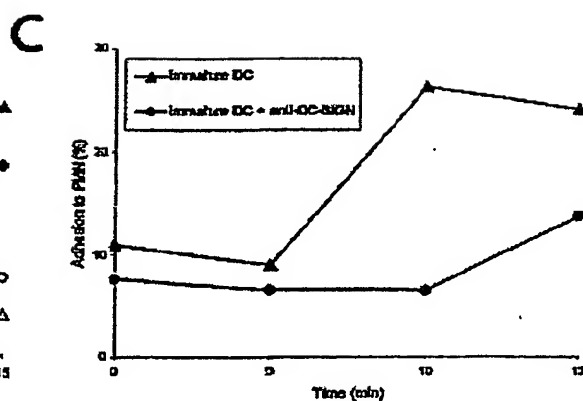
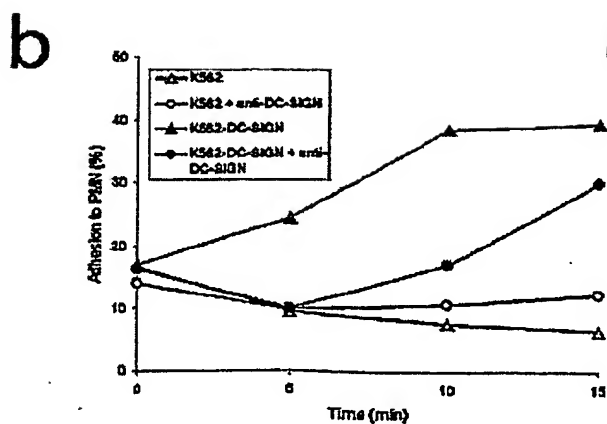
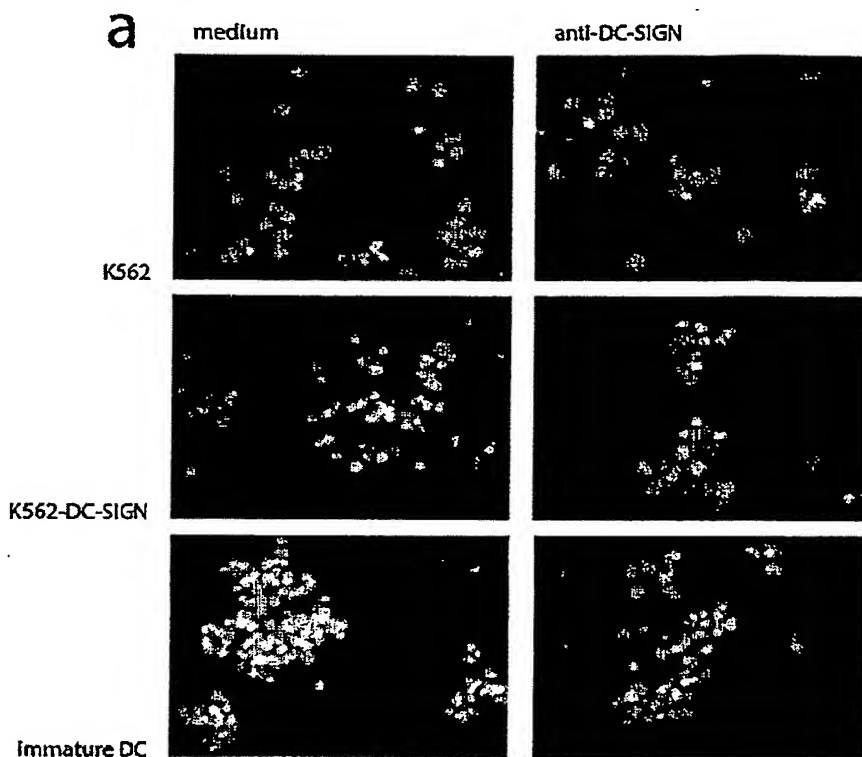
Cellular DC-SIGN expressed on K562 transfectants and immature DC binds native CEACAM1 from PMN.



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Fig. 56

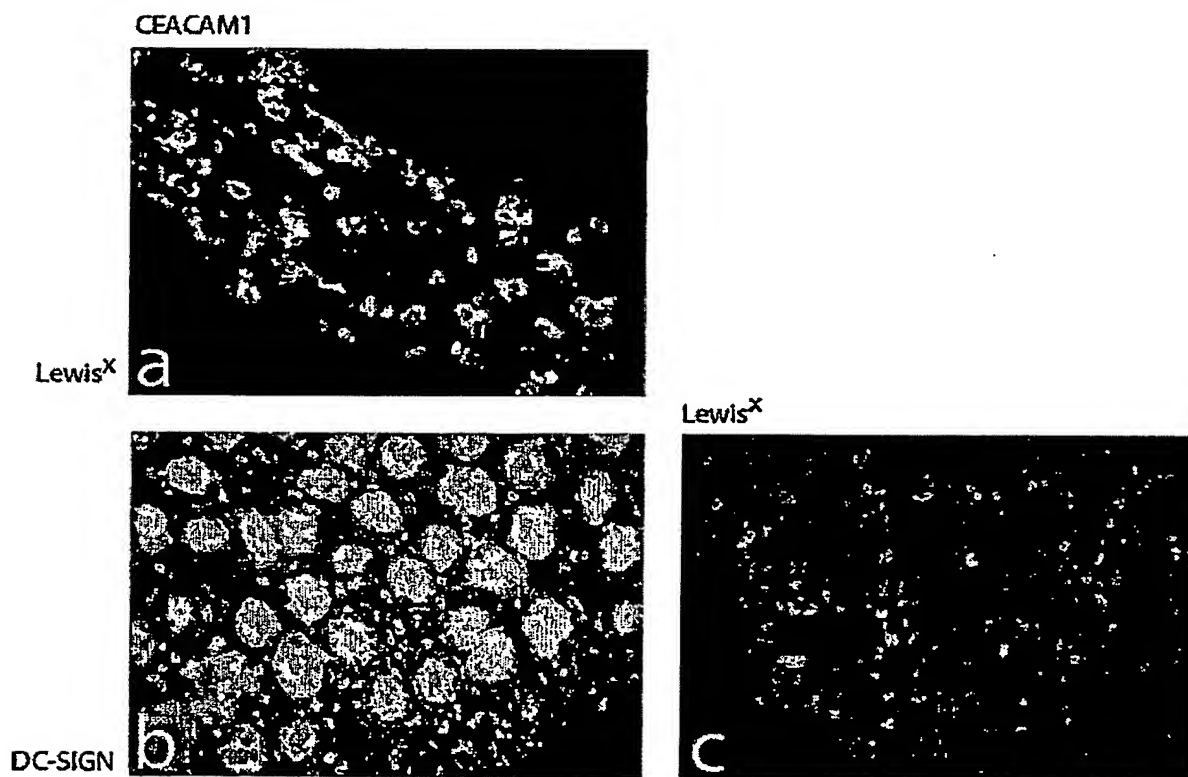
DC-SIGN is involved in clustering of DC and PMN.



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Fig. 57

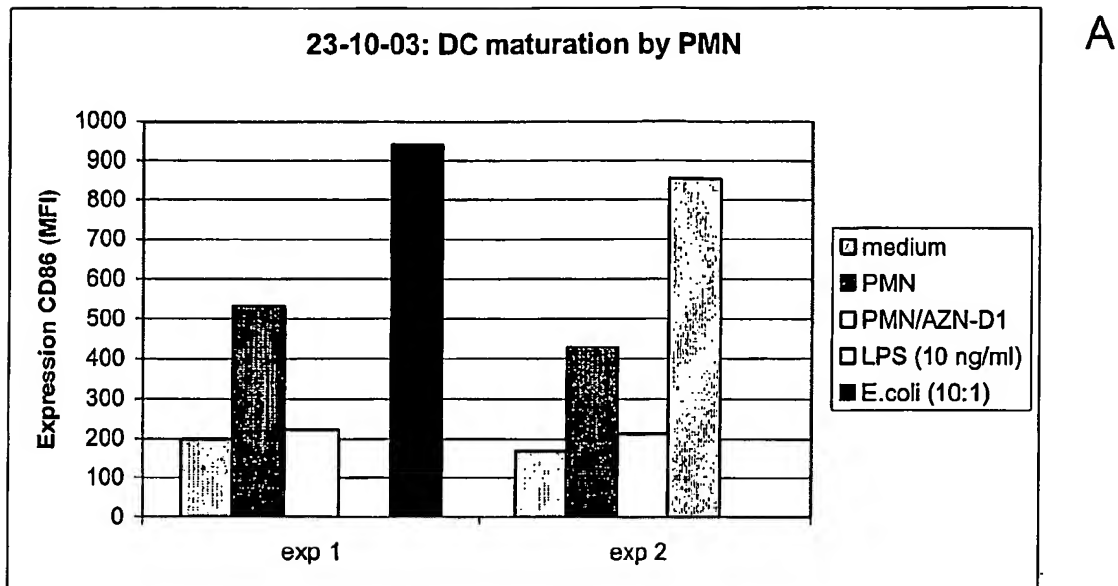
Localization of PMN and DC in colonic mucosa of patients with Crohn's disease.



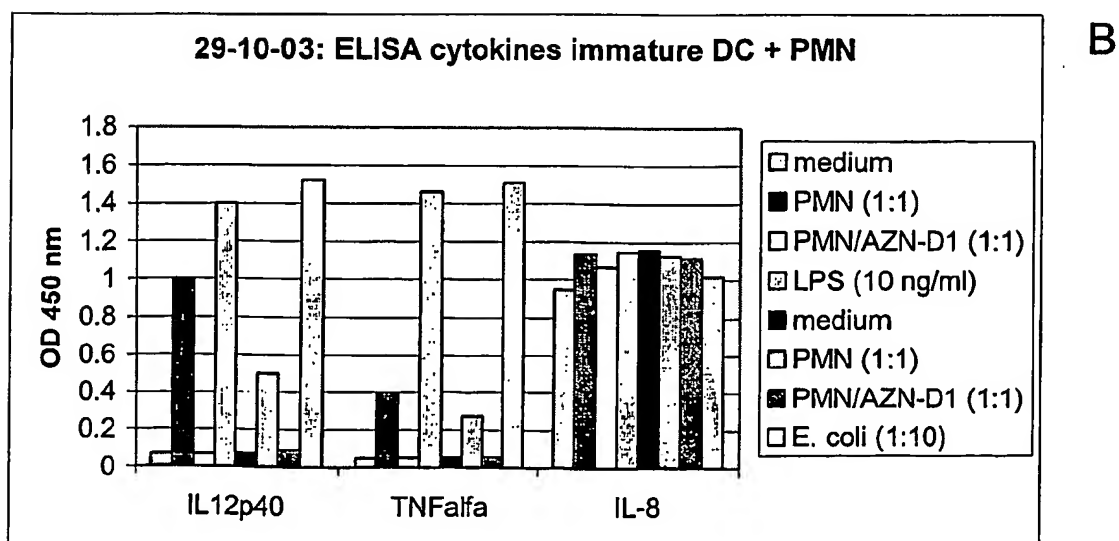
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Fig. 58

PMN activate immature DC through binding DC-SIGN.



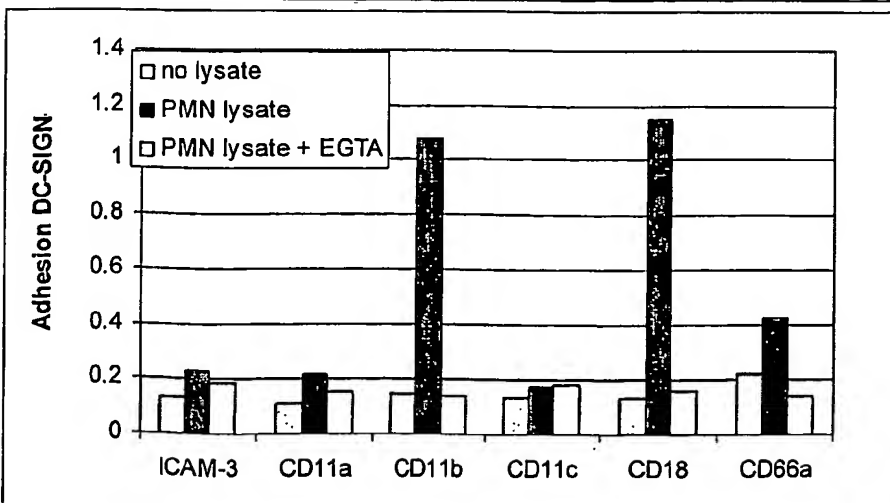
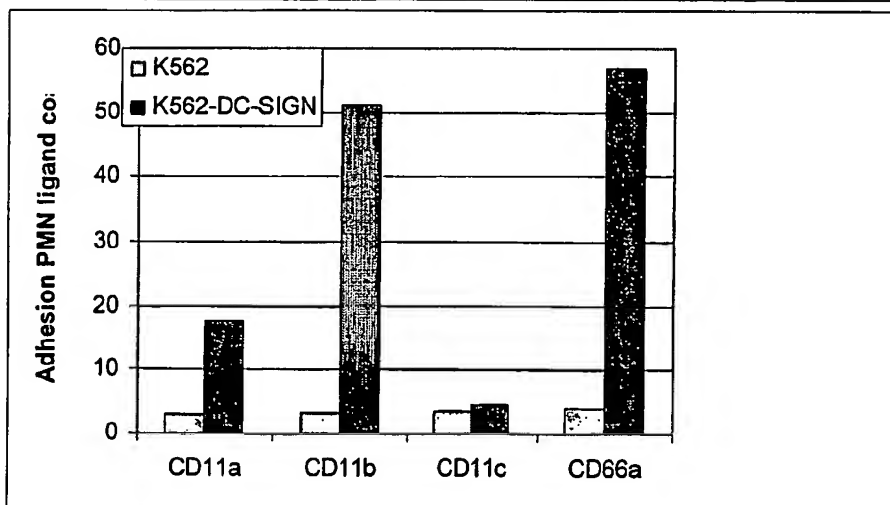
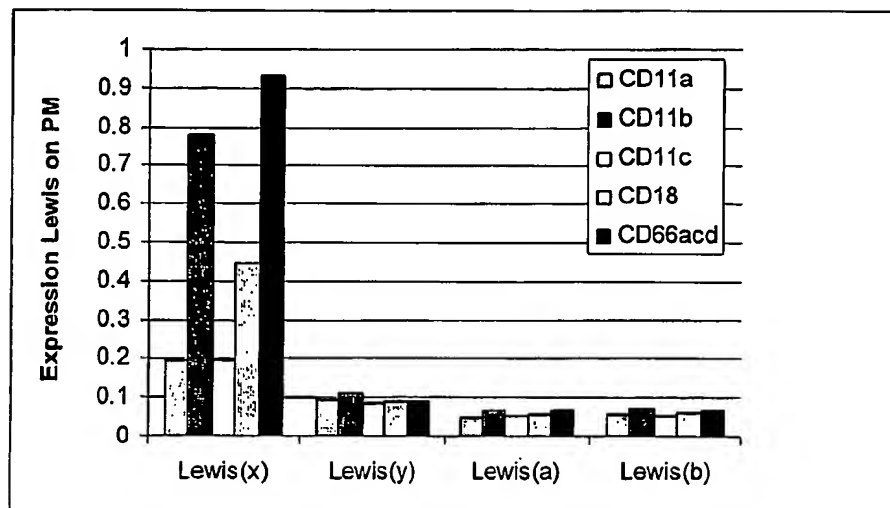
PMN induce upregulation of co-stimulatory CD86 on DC, which is dependent on DC-SIGN binding



PMN induce secretion of inflammatory cytokines by DC, which is dependent on DC-SIGN binding

Fig. 59

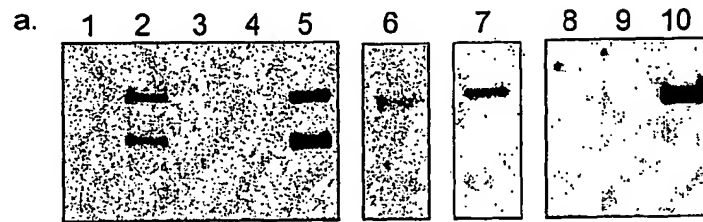
DC-SIGN binds Lex expressing CD11b present on neutrophil



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Fig. 59D

DC-SIGN binds CD66acd and CD11b on PMN



. Biotinylated PMN:

1. IP ICAM-3-Fc, IB streptavidin,
2. IP DC-SIGN-Fc, IB streptavidin,
3. IP anti-DC-SIGN, IB streptavidin,
4. IP anti-CD66acd, IB streptavidin,
5. IP anti-CD11b, IB streptavidin,
6. IP DC-SIGN-Fc, IB anti-CD66acd,
7. IP DC-SIGN-Fc, IB anti-CD11b,
8. IP anti-DC-SIGN, IB DC-SIGN-Fc,
9. IP anti-CD66acd, IB DC-SIGN-Fc,
10. IP anti-CD11b, IB DC-SIGN-Fc.

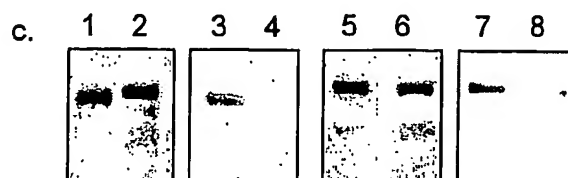
IB, immunoblotting (detection/binding)

IP, immunoprecipitation (capture)

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Fig. 60

DC-SIGN binds Lewis on CD11b



Biotinylated PMN, IP anti-CD11b, IB streptavidin:

1. control
2. PNGaseF

Biotinylated SW948, IP anti-CD11b, IB DC-SIGN-Fc

3. control
4. PNGaseF

Biotinylated PMN, IP anti-CD11b, IB streptavidin:

5. control
6. α -1,3/4-Fucosidase

Biotinylated PMN, IP anti-CD11b, IB DC-SIGN-Fc

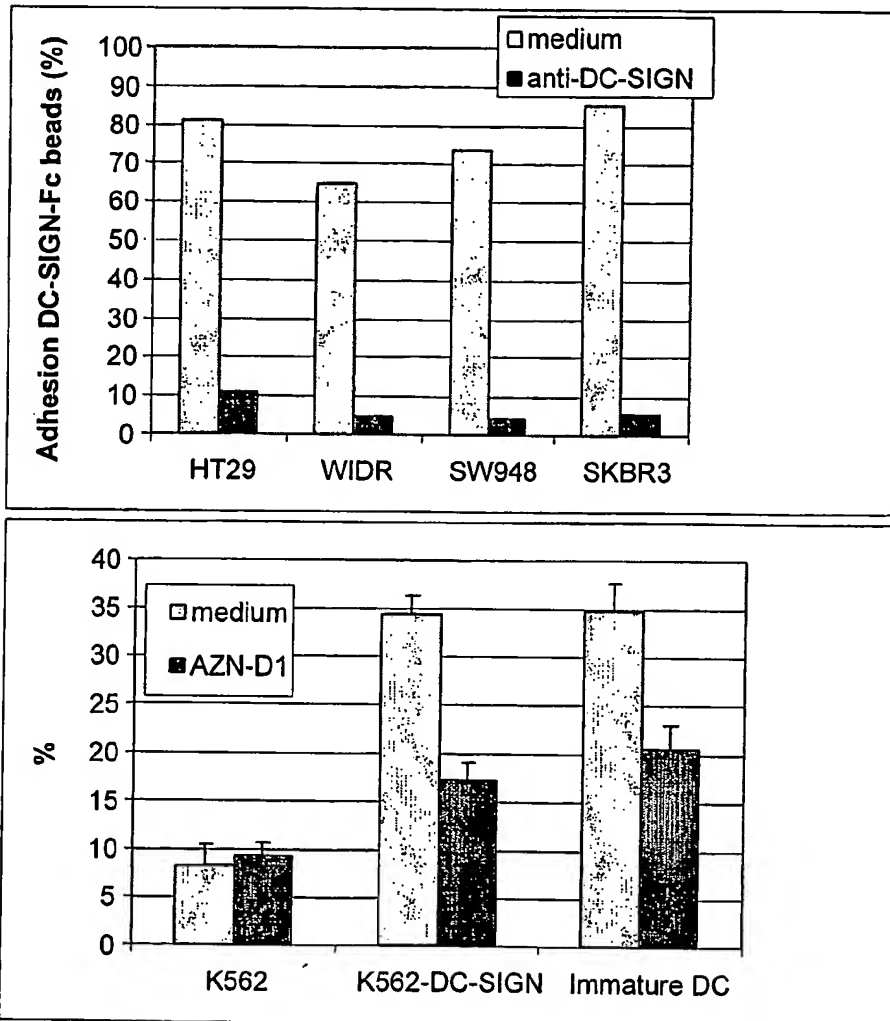
7. control
8. α -1,3/4-Fucosidase

IB, immunoblotting (detection/binding)

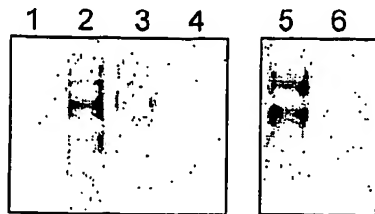
IP, immunoprecipitation (capture)

Fig. 61

DC-SIGN binds tumor cells expressing CD66e
 DC-SIGN binds the tumor antigen CD66e=CEA



C



b. Biotinylated SW948:

1. IP ICAM-3-Fc, IB streptavidin,
 2. IP DC-SIGN-Fc, IB streptavidin
 3. IP anti-CD66ae, IB streptavidin
 4. IP anti-CD11b, IB streptavidin
 5. IP anti-CD66ae, IB DC-SIGN-Fc
 6. IP anti-CD11b, IB DC-SIGN-Fc
- IB, immunoblotting (detection/binding)
 IP, immunoprecipitation (capture)

DC-SIGN recognizes Le^x-Le^y on CD66e on tumor cells

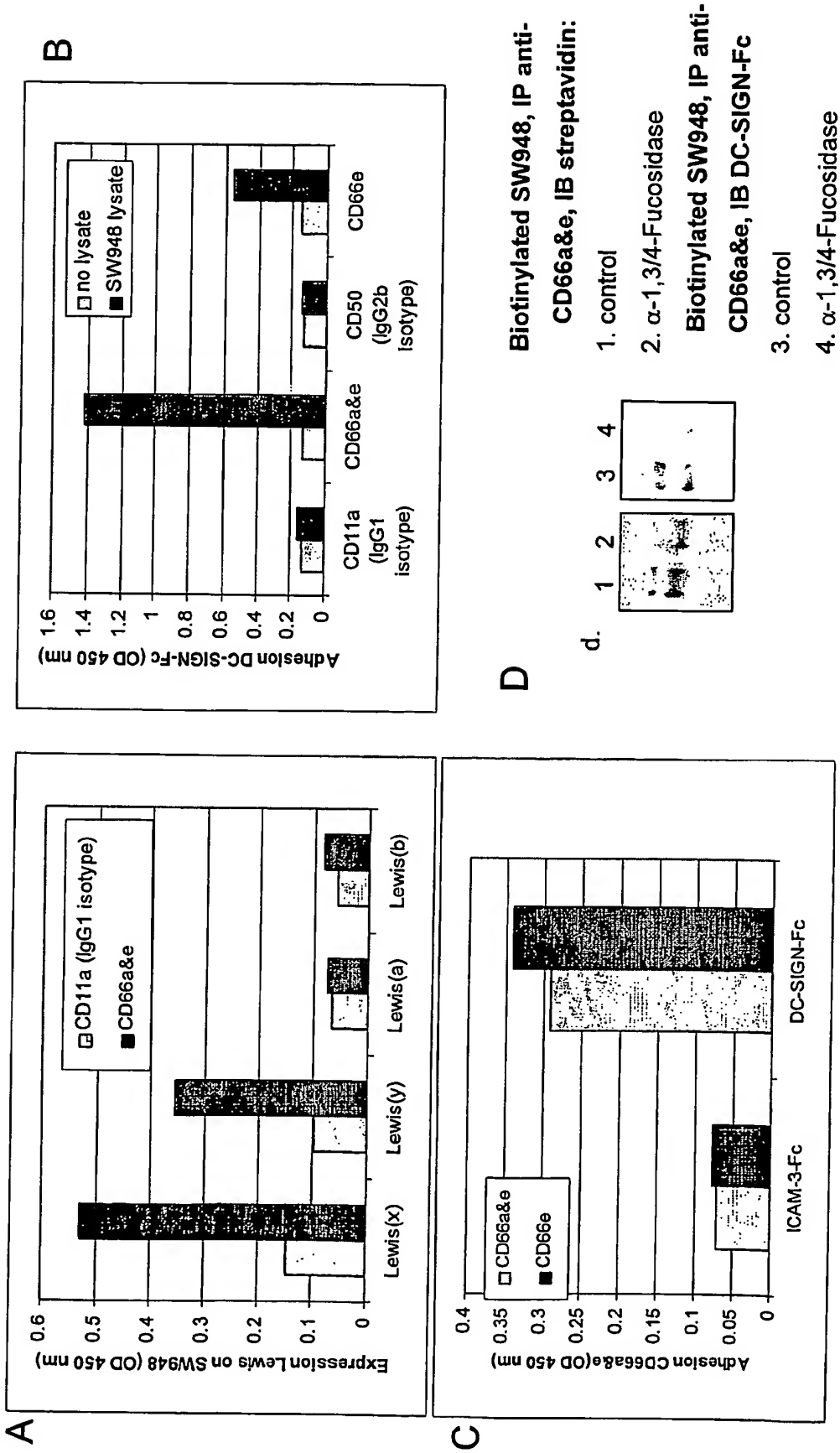


Fig. 62

Binding of *Neisseria Meningitidis* to 293T transfectants (100703)

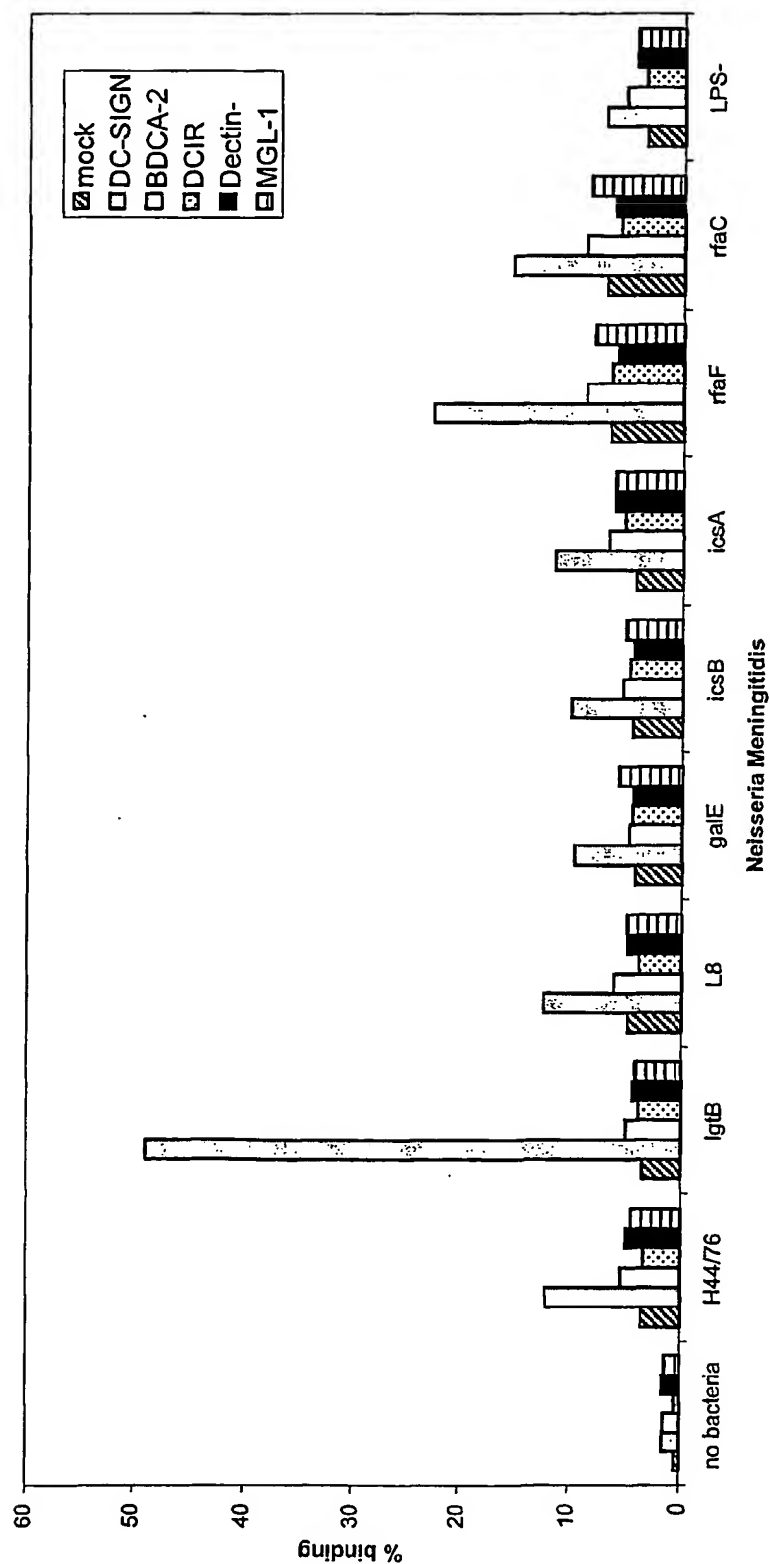


Fig. 64

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Binding of *Neisseria Meningitidis* to DCs (100703)

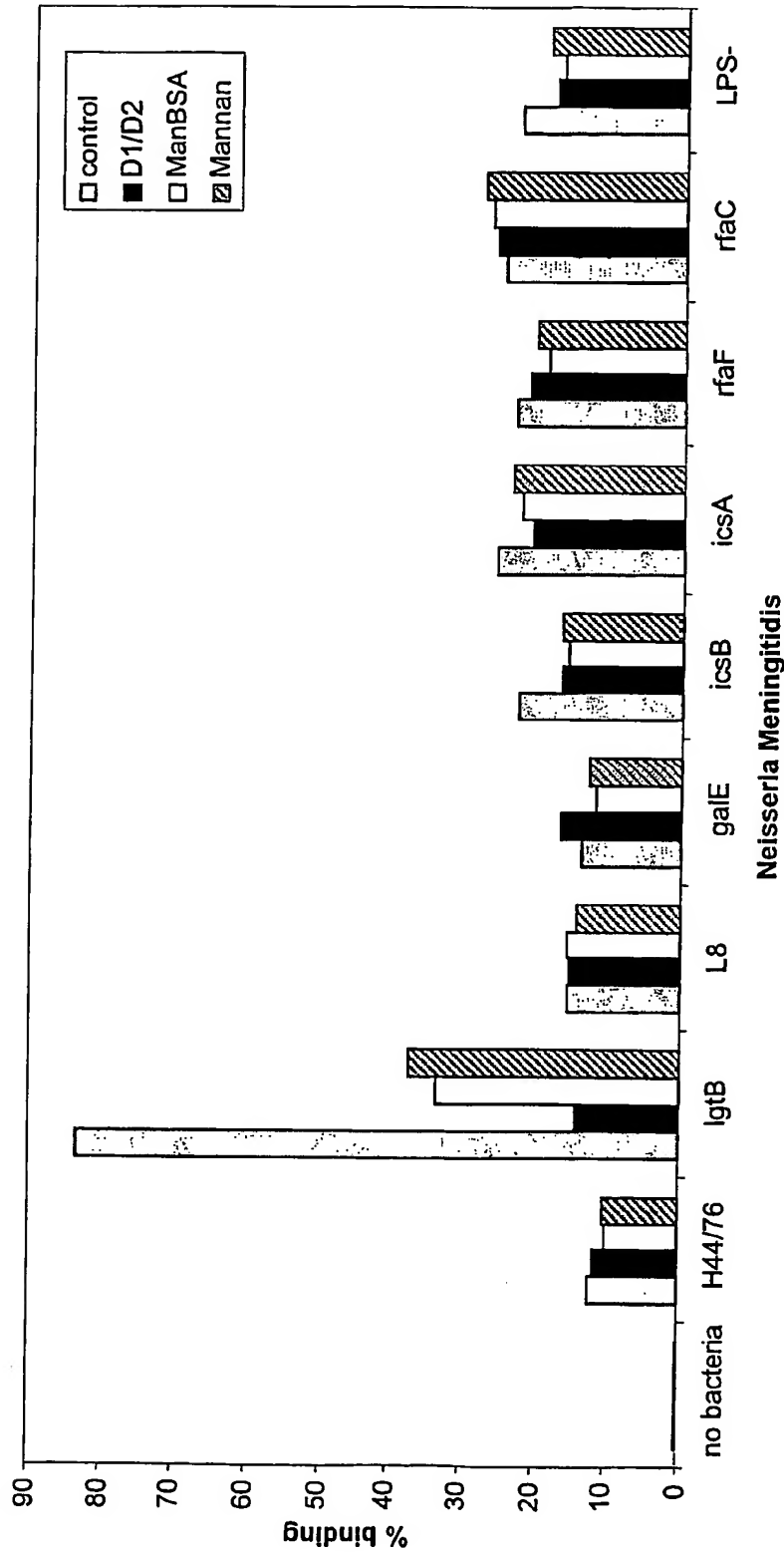
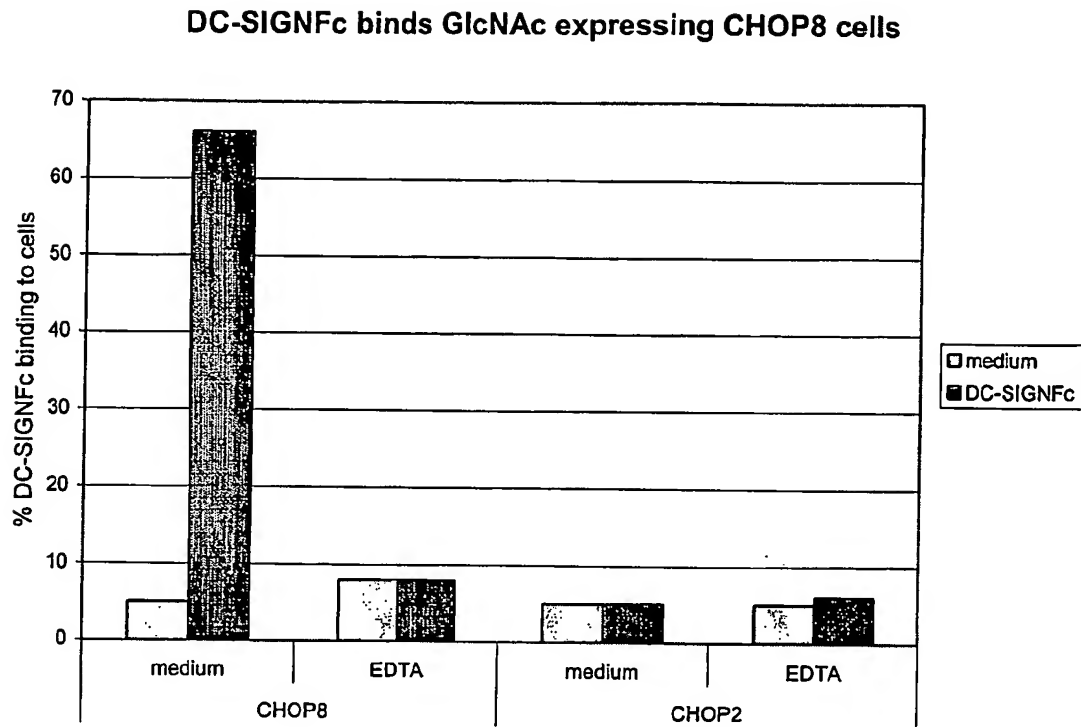


Fig. 65

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Fig. 66



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